THE UNIVERSITY OF ALBERTA

A STUDY OF THE RELATIONSHIP BETWEEN ABILITY IN FORMAL GRAMMAR AND ABILITY IN LITERARY AND LINGUISTIC FIELDS

A DISSERTATION
SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR
THE DEGREE OF MASTER OF EDUCATION

COLLEGE OF EDUCATION

BY
JOHN WEST CHALMERS

EDMONTON, ALBERTA
MAY, 1941.

CONTENTS

CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

PURPOSE OF THIS STUDY

The primary purpose of this investigation is to examine as thoroughly as possible the validity of certain claims advanced from time to time to justify the right of grammar to an important place in the school curriculum. Two statements have appeared in the literature dealing with grammar, the first by Rapeer (1) in 1913, the second by Rivlin (2) in 1934. They are presented herewith in tabular form.

1. It leads to the use of better English.	1. It helps the pupil to write and speak more correctly.
2. It serves to prepare the child for the study of a foreign language.	2. It helps the pupil's study of a foreign language.
3. It is valuable in the interpretation of literature.	3. It is of value in the study of literature.
	4. It teaches an appreciation of one's own language.
4. It is valuable as a discipline.	5. It aids in teaching the pupil how to think logically.
5. It provides the pupil with an indispensable terminology.	
	6. It is an element of our culture and, as such, should be studied.

Specifically, the problem may be stated as follows: To what extent are (a) a knowledge of formal grammar, and (b) a knowledge of the terminology employed in the study of grammar associated with each of three abilities, viz., (a) to write correct English, (b) to understand the written language, and (c) to differentiate between good and inferior prose composition? It will be seen, then, that items 1, 3, and 5 of Rapeer, and items 1, 3, and 4 of Rivlin are under review.

A secondary purpose of this investigation was to prepare and standardize two forms of an objective test in formal grammar, and one form of an objective test in grammatical terminology. Copies of these tests are included in the Appendix.

The necessity for an investigation of this nature appears to the author especially urgent at this time. In Alberta the new course of studies for high schools, introduced during the period 1936 to 1939, has cut virtually in two the time formerly devoted to literature and language as special subjects. Moreover, as literature and language have been combined, and as literature has been given a greatly enriched content, it follows that formal language work now occupies very little class time indeed. In addition, the prescribed course in language places a heavy emphasis upon oral work, and upon informal discussion and debate. Little attention is paid to mechanical detail; much to securing spontaneous and original contributions

from the pupils. The study of formal grammar has all but disappeared from the classrooms of Alberta schools. In many other parts of Canada and in many parts of the United States a similar situation prevails.

Obviously the fact that the time allocated to grammar study has been generally reduced does not in itself prove that such study is devoid of values. Rather it points to the necessity that the values be clearly specified as teaching objectives. The teacher, unable any longer to present his subject in formal lessons, must be alert to achieve his aims by informal and incidental means. To succeed, he must know precisely what he is attempting to do.

As will appear in a later chapter, numerous attempts have been made to determine the value of a study of formal grammar. Most investigators concluded that a study of grammar does not improve the student's ability to speak or write good English, or to appreciate and interpret English prose well. The belief that a knowledge of formal grammar has no such functional value becomes, one might say, the orthodox one. The matter having been settled to the satisfaction of the investigators, interest in the matter subsided, and no recent studies dealing with grammar appear to have been made.

However, to this investigator, these previous studies do not seem conclusive. The reasons for this opinion follow.

In the first place, many of the previous investigations were highly subjective in character. Since they were

made, more objective and accurate testing techniques have been devised, and as far as possible, these have been incorporated into the battery of tests used in this investigation. Most of the tests used herein are of known validity, or reliability, or both. This cannot always be said for previous studies.

Secondly, refinements have also been made in the statistical methods of handling raw data. As an example, none of the co-efficients of correlation upon which previous investigators based their conclusions seem to have been corrected for attenuation. This has been done where possible in this study.

Thirdly, previous studies were in the main based on rather small homogeneous populations. This investigation is based on test scores obtained from a larger population. It is also more heterogeneous, including students from a variety of schools, large and small, urban and rural, and from a variety of backgrounds - agricultural, professional, etc.; poor and middle class, English-speaking and foreign-speaking.

Finally, the method by which present day students in Alberta learn their grammar is quite different from that by which previous generations of students learned theirs. Formerly, and indeed until quite recently, grammar was studied as a distinct classroom subject. Formal lessons in the rules and principles of grammar were taught at regular intervals, and much time was given to exercises in parsing

words and analyzing sentences, but little or none to grammar used synthetically. Moreover, much of the content of the subject was not adapted to the needs of the students, and much that might well have been included was omitted. A fuller discussion of the orthodox course in formal grammar will be made in a later chapter.

Under the new Alberta curriculum, however, grammar is no longer taught as a subject separate from composition, but is correlated with it very closely. Facts about grammar are introduced into composition lessons only when they will assist the student in writing and speaking better English. For example, if a pupil makes an error in agreement of verb with subject or of pronoun with antecedent, the instructor points out the mistake and tries to get the student to correct it himself. Similarly, if one tense or mood is used when another would more exactly convey the meaning of the young writer, the correct form and the reasons for using it are drawn to his attention.

By such informal methods, then, have most of the pupils tested in this study learnt their English grammar. The few who had more formal training are some of the Grade XII students who began high school under the previous curriculum and had not graduated when the revised curriculum was introduced.

REFERENCES

(1) L. W. Rapeer: The Problem of Formal Grammar in Elementary Education--Journal of Educational Psychology, Vol.IV, page 125.

(2) H. N. Rivlin: Functional Grammar.

CHAPTER II

THE PLACE OF GRAMMAR IN THE HISTORY OF EDUCATION

Although the rudiments of the science of grammar may be found in the works of Plato, Aristotle, and the Stoics, its content was not organized and systematized until the third century B.C. when this work was accomplished by Aristarchus, fourth keeper of the library at Alexandria. Aristarchus was the first in the history of Western education to distinguish the different parts of speech. Thereafter grammar rapidly became an important part of Greek culture.

As Rome usurped the domains of Alexander the Great, she also adopted and imitated much of the cultural heritage of the Greek world. Of the elements of Greek literary culture, grammar and rhetoric especially appealed to the practical mind of the conquerors. These two studies became the basis of higher education in the Roman world. In Rome the first grammar school was established in the first century B.C. by L. Aelius Stilo. Others were soon founded. Boys were normally admitted to these schools at the age of twelve or thirteen years and usually remained some years in attendance. The "grammar" which was studied included not only grammar as the term is understood today, but also literature, and especially poetry. The study was intensive and analytical. The two principal grammar texts were the Greek grammar of Dionysius Thrax, a disciple of Aristarchus, and the Latin grammar of Remmius Palaemon, the latter written about A.D. 70.

For the first five centuries of the Christian era the curriculum of the Latin grammar schools remained almost unchanged. Indeed, the Greek grammar of Thrax remained a standard text in Constantinople until as late as A.D. 1300. But if, during these five centuries, the content of the grammar course varied little, the purpose in its teaching changed greatly. At first presented as a basis for the study of rhetoric, which had a not-too-remote application in law court and senate house, grammar came presently to be studied for its own sake, as mental discipline. Emphasis shifted from content to form. This shift in emphasis is exemplified in the treatise on grammar written by Martionus Capella in the fifth century, which treatise has been characterized as dull, arid, and pedantic.

With the decline of Roman civilization and the spread of Christianity, the study of grammar practically ceased. The barbarians were preoccupied with other concerns, and leaders among the Christians viewed with suspicion all learning associated with pagan culture. Even Gregory, Bishop of Tours in the sixth century, admitted his ignorance of grammar and his inability to write with grammatical correctness. His contemporary, Pope Gregory the Great, although himself a master of profane studies, expressed contempt for them and actively discouraged their pursuit. Only in Spain did the study of grammar maintain a precarious foothold. In the early years of the seventh century Isadore, Bishop of Seville, recommended it to the attention of his clergy on the ground that knowledge of grammar

would be useful to them in combatting false doctrine. "Better grammar," he said, "than heresy."

During the Dark Ages in Europe education meant little more than an elementary ability in reading and writing. Gradually, however, as the gloom of the Dark Ages was dispersed and learning became more general, grammar was again widely studied for the strictly utilitarian purpose of enabling clerks and lay scholars to write Latin prose that others could read and comprehend. In the eleventh and twelfth centuries rhetoric developed into a flourishing study of law in Italy, and logic into theology in the north of Europe, but grammar, the third of the liberal arts that made up the trivium, was still suspect because of its pagan associations. However, by 1215, grammar (without literature) was being studied for the baccalaureate degree at the University of Paris. This separation of grammar from literature again marked a trend towards formalism, a formalism which became explicit in the methods of Guarino of Verona (1374 - 1460), who believed a study of grammar should precede that of literature, and who separated grammatical rules from their context. The first modern Latin grammar, written by Perotti, also emphasized the formal aspects of the language.

Although these two men lived at a time when the glow of the Renaissance dawn was appearing on the horizon, their attitude towards grammar was really pre-Renaissance. The authentic Renaissance viewpoint was that of Erasmus, who

held that rules of grammar must ever be subordinate to content; and of Melanchthon, the Preceptor of Germany, who emphasized grammar as a preparation for Latin reading and writing. Melanchthon's contemporary, John Calvin, also believed that grammar should be taught from a functional point of view, for use in writing, speaking, and understanding. In addition to Latin grammar, Calvin emphasized the study of the vernacular and its grammar.

The sixteenth century witnessed the establishment in England and elsewhere of numerous Latin grammar schools. In the normal course of events these might have changed from Latin to vernacular schools. Latin was no longer the one language in which scholars expressed their views. Comparatively few scholars retained the belief that classical studies were the sole basis of a liberal education. In 1640 appeared the English Grammar of Ben Jonson, who endeavored to formulate the grammatical principles of the English tongue, not to apply the laws of Latin grammar to the vernacular.

Although the seventeenth century opened with brilliant prospects for European education, these failed to materialize. The religious wars following the Reformation - the Huguenot wars in France, the Thirty Years' War in Germany, and the Civil War in England - left the Protestant nations exhausted. The reformed churches lost their hold on the schools; state and private funds were not available; and the fixed revenue from endowments became steadily of less value in an age of rising prices. The inevitable result was a decline both in

the extent and in the quality of instruction in most Northern European lands.

Under these circumstances the grammar schools, teaching mainly Latin and religion, maintained their position because of priority in the field and because of public indifference to education. Their attention being given mainly to the classics, it was but natural that when the grammar of the vernacular was studied, it should be done in the spirit of Latin, with the result that Latin terminology was adopted. Latin case and tense endings and other inflections were discussed in connection with English, when in fact English often had no such inflections. Important phases of English grammar, such as the significance of word order, were omitted because these things had no comparable value in Latin. Throughout the seventeenth century the English grammar schools appeared impervious to new ideas and throughout the century Lily's Latin Grammar, first published in 1540, remained a standard text. Grammar again became an analytical, formal, and sterile subject, and led Locke in "Some Thoughts Concerning Education" (1693) to affirm that although a knowledge of (Latin) grammar might be needful for a man of learning, a great critic, or a scholar, it was absolutely useless to the average adolescent.

By the eighteenth century the grammar schools were hopelessly out of touch with contemporary needs, and when a reformation in education during this century appeared, it took place largely outside the grammar schools. This

reformation was mainly in the field of popular as distinguished from aristocratic learning. It emerged from the outburst of religious feeling that marked the appearance of methodism, but was not confined to the dissenting churches. In England, for example, the established church sponsored the Society for Promoting Christian Knowledge. In France La Salle founded his Institute of the Brethren of the Christian Schools. These organizations, and many like them, were established to provide education for the common people. As a result the vernacular and not Latin was taught.

Nevertheless, the grammar taught in such schools was Latin and not the native grammar of the vernacular itself, even though the medium of instruction was the vernacular. Therefore, with the best of intentions it was not easy to make such grammar function in use, and by the end of the nineteenth century its place in the curriculum was being justified largely on the old grounds of mental discipline.

On the American continent grammar received much the same attention and was taught in much the same way as was the case in the old country. When education began to be studied scientifically at the end of the last and beginning of the present century, grammar, like other subjects, was examined very critically by a number of investigators. A study of grammar was not found to strengthen the student's ability to write or speak good English, or read with comprehension, to appreciate good literature, to improve judgment or general intellectual capacity. As a result,

grammar at present is rather generally discredited, and the study of formal grammar is in modern schools on this continent gradually or rapidly losing its ancient position.

In this brief sketch of the place of grammar in education a recurrent pattern may be discerned. First, grammar is taught strictly for utilitarian and functional purposes. Thus, as the content of the school programme becomes fixed and stereotyped, grammar is taught more and more as an end, less and less as a means. Its treatment becomes formal and analytical until finally the content of the subject matter becomes so divorced from any relation to current needs that leaders in education hold it either altogether useless or advocate its complete reorganization, and the cycle starts anew. With more or less distinctness this pattern may be found in the days of the Roman Empire, the pre-Renaissance period, the post-Renaissance era, and the modern age. At present the wheel seems to have come full circle.

REFERENCES

(3) Wm. Boyd: The History of Western Education.

(4) Henry Sweet: A Short Historical English Grammar.

(5) Ben Jonson: The English Grammar.

(6) Otto Jespersen: Essentials of English Grammar.

CHAPTER III

THE NATURE OF THE LAWS OF GRAMMAR

To many high school students, grammar consists mainly of innumerable laws or rules, with many exceptions, governing the relationship of words to each other when used in sentences. To discover what is, or rather what should be, the bases of these laws is the purpose of this chapter.

The word 'law' is employed with different meanings in our language. To the physical scientist a law is a formal statement of facts invariably observed in natural phenomena. Such a law, as the law of gravitation, is popularly supposed to represent the innermost truth of nature, to possess universal and timeless validity. However, today it is generally recognized that the laws of natural science are no more than very close approximations to the truth, and that these laws are continually being refined.

Such a law as the law of gravitation may be used to predict the outcome of a single event; for example, dropping a bomb from an airplane. There is, however, another type of law known in the realm of science. This is the statistical law, which predicts the outcome not of a single event but of a large number of events. The Mendelian laws of heredity are of this type.

In any case, whether the natural law deals with the isolated event or the group of events, it is descriptive

rather than prescriptive; in the indicative mood, so to speak, rather than in the imperative.

In the juridical sense, however, 'law' is a rule or body of rules laid down by authority to regulate and control the individuals of a state or community. Law in this sense is prescriptive and imperative, not descriptive and indicative.

The law of the land is commonly divided into two great divisions. The first and older of these is common law, the law that has sprung out of the customs and mores of the people until finally it has become embodied in the written decisions of the law courts, and is binding on the members of the community or nation where it developed.

In addition to the common law there is also the statute law prescribed by the governing authority of the state. Often such statute law is no more than an organization and codification of previous common law. In such a case the statute law, like the common law it replaces, aims to make definite and clear the principles by which man is already governing his conduct in relation to his fellow-man.

In other cases, however, statute law seeks to regulate man's behavior by new principles of conduct. Sometimes such law is successful in achieving its aims, but not always. To be successful in its aim, such law must, in a democracy, have the active support of an overwhelming proportion of those affected by it.

To which of these types of law, if any, do the laws of grammar correspond? Do they rest on principles of nature, or are they averages? Are they based on the customs of the people, or are they laid down by a superior authority? The answer seems to be that, by different persons and for different purposes, they have corresponded to all these types of law.

Richards (Interpretation in Teaching, pages 189 - 190) gives us a list of some obvious purposes of grammar, which purposes may interfere with each other. They are:

1. "To provide a machine by the aid of which a language may be taught --- (The prime use of Latin Grammar ---)."

2. "To establish a norm of good use with which practice may be compared. (The chief aim of early grammars of English and of much 18th Century Work."

3. "To give a psychological analysis of the different mental processes and operations supposed to accompany the use of different words and sentences."

4. "To examine the logical form of the statements made with different arrangements of words."

5. "To provide a machine by which changes in the meanings and forms of words can be systematically presented so that the laws of change may be inquired into."

6. "To provide apparatus by which languages can be compared as regards ---- range of use, precision, ambiguity, facility, sublety of discrimination, pregnancy, etc.----."

7. "To inquire into and measure the influence of the forms of language upon the ways - social, political, moral, philosophical - of thought."

8. "To aid training in interpretation by which our use of language, both active and passive, might be improved."

Grammar, to different persons, means different things. To some it consists of a set of natural laws governing the phenomena of language, as physics consists of a group of natural laws governing the phenomena of physical bodies. To others, grammar is the application of such laws in making thought, feeling, and the like, intelligible to others; as engineering is the application of physics to problems of building roads, bridges, etc. To some, grammar is a pure science; to others an applied science. To many it is both; to most, perhaps, it is a mixture, or rather a muddle, of the two.

To the grammarians of the early Alexandrine schools, grammar was a pure science. At their time arose what I. A. Richards calls the doctrine of the Divine Right of Names, which was "that words meant what they mean in virtue of mysterious analogies, amounting to strict correspondence, between words and things, or words and meanings." (7) This, then, was the basis for the natural laws of grammar. But this doctrine teaches that each word has but one meaning, eternal and unalterable. Gradually, however, students of language began to realize that words change their meanings through the years, and that one word may have many meanings at one time. They discovered also that the meaning is also affected by its context. Therefore the doctrine of the Divine Right of Names was discarded and another basis of the laws of grammar was sought.

Grammarians then began to study the rules which seemed to govern their language as it was actually spoken and, especially, written. Perhaps they believed they were still seeking natural laws, laws of a statistical nature. Actually, however, it was the "common law" of the language to which they turned their attention. And as the common law of the land originally is simply the custom of the people, but finally becomes prescriptive and demands obedience, so also did the common law of the grammarians. As the people (the Best People) spoke and wrote, so must we all do. This in essence is what Richards calls the Doctrine of Usage. And this Doctrine he finds to be completely pernicious.

The principles a skilled physician follows are not sound because they are his. On the contrary, he is a good physician because his practice is based on sound principles. The theories of a great engineer are not good because he is a great engineer; his greatness rests upon a foundation of good theory. Similarly with the great writer, he is great at least partly because he writes according to sound principles or laws of language. To write and speak well we must know these principles. They cannot be found by examining "good usage"; all we can get by this method is a set of rules which we endeavor to apply blindly. The rule that was the sound application of a principle under one set of circumstances may not be so when the circumstances change, yet it is rules and not principles which most school grammars give us.

Again, the meaning of a word is governed by its use. But the follower of the Usage Doctrine is confined by a strait-jacket; he can never use a word in a way that has never been used before, but must always use the same word with the same meaning. No matter what the context, the meaning must remain unchanged. Thus the Usage Doctrine perpetuates all the evils of the doctrine of the Divine Right of Names against which it is a revolt.

Of course the Usage Doctrine cannot confine the language in a strait-jacket, as the changes in use of the language during even quite brief intervals indicate. Nevertheless, the doctrine is pernicious in that it does attempt such a strait-jacket confinement, and if it never wholly succeeds, it does not entirely fail. It stultifies the imagination and thwarts the eager curiosity of the student, so that the study of language, which should be the most exciting and interesting subject for the eager young mind, becomes instead the most deadly.

If we discard both the doctrine of Divine Right and that of Usage, what other possible basis for principles or laws of grammar can we find? Perhaps we could set up a governing body to rule the English language, as the French Academy rules the French language. Then its laws would be like statute law, and although they might serve in a fashion for language as an art or an applied science, they would not function as the laws of a pure science of grammar, or give us any insight into the nature of grammar. Furthermore, in

practice the precepts of such a body would be most likely based on established custom, and we should again be saddled with the faults of the Doctrine of Usage.

Perhaps the basis does not matter as long as we have the laws (i.e., the rules) of grammar. But a moment's thought will show us that this is just another form of the Usage Doctrine, as from no source but usage could our laws be obtained.

There is still one alternative. Fundamentally, the purpose of language is to express thought. Therefore the laws of grammar should be based on the laws of thought, or logic. To establish this relationship is enormously difficult, as Richards shows in his chapter on Grammar and Logic. But failure to base the laws of grammar on a bed-rock of logic results in so extensive and so enduring difficulties and in so many misunderstandings, that any effort to achieve success is justified. That this logical basis for the laws of grammar may yet be found is shown by the following paragraph from page 290 of Richards' "Interpretation in Teaching."

> "But back to Mill. His sentence, 'The principles and rules of grammar are the means by which the forms of language are made to correspond with the universal forms of thought,' needs turning round to: 'The rules of grammar are the means by which grammarians have attempted to make the forms of thought correspond with the forms of language!' Modern philosophers.....taking a much deeper dive than Mill into the subject, are endeavoring with some success to reduce logic to the fundamental grammar of a perfect language. They too would say that the laws of thought are the rules of language....."

SUMMARY

In the past the grammarians have generally looked to usage itself as a source of the laws and principles of grammar. This empirical method has resulted in the accumulation of a number of rules which have been used in applied grammar, but have not led to any real insight into the principles of language.

A pure science of grammar can find these fundamental principles in the science of logic. An applied science of grammar can apply these laws or principles in writing or speaking the language. Neither discovery nor application of these laws is easy, but a start can be made in any classroom by a teacher's insistence upon clear and careful thinking before thought is translated into speech, rather than by concentration only upon the form in which the thought is expressed.

REFERENCES

(7) I. A. Richards: Interpretation in Teaching.

(8) Richards and Ogden: The Meaning of Meaning.

CHAPTER IV

PREVIOUS EXPERIMENTAL STUDIES OF THE VALUE OF FORMAL GRAMMAR

During the first quarter of the present century a number of investigations were made of the relation between knowledge of formal grammar and ability both to speak correct English and to interpret the English language. The findings pointed so unanimously and unequivocally to the absence of any significant relationship that for many years subsequently the issue was thought to be resolved and the question closed. Curriculum committees of the avowedly more progressive communities now permitted the inclusion of formal grammar only out of deference to its former status in school programs, and indeed began to look with suspicion upon grammar of any sort. Of late, however, doubts have been voiced that the earlier studies were really conclusive. Not only might the investigation techniques have been faulty, but there is the possibility also that the ineffectiveness of the grammar teaching was the result of poor methods, ill-chosen content, or of both. Perhaps it would be well to re-open the question, to re-examine some of the old investigations, and canvass the possibilities of different approaches to the teaching of grammar. The record of the attempt to carry out this idea constitutes the main body of this study.

Unfortunately, the original reports of several of the earlier studies are not now accessible. They exist only in the summaries and references of later writers. There do exist, however, a few of the more elaborate, and presumably more solid, of the studies, and one in particular which by common consent may be regarded as in its way a minor classic. This is the study of Franklyn S. Hoyt..

We proceed now to an evaluation of some of the older studies.

THE HOYT STUDY.

This report (9) is that of Franklyn S. Hoyt, based on an experiment he performed with two hundred Indianapolis first-year high school students. His problem as stated was, "Does the study of formal grammar in the elementary school help children very much (a) in the use of correct English and (b) in the interpretation of language?"

As the first step in finding the answers to these questions, Hoyt had 200 first-year high-school students write three tests. The first was a composition test based on the question, "How would you spend a thousand dollars if that sum should be given you to spend during the Christmas holidays? Why would you spend the money as you propose rather than in any other way?" No time limit was set for the completion of the exercise.

The second test was designed to measure proficiency in grammar. Forty minutes were allowed. The test was based on that part of Gray's Elegy beginning "The curfew tolls ----" to "------the hamlet sleep." The students were asked to do the following exercises:

1. Select and write out in full (a) a compound sentence; (b) a complex sentence.
2. Diagram or analyze the last two lines of the first stanza.
3. Select (a) two phrases and (b) two clauses. Tell what each modifies.
4. Give the part of speech of the first word of each stanza, and tell why you so classify it.
5. What is the case of each of the nouns in the last stanza? What determines the case in each instance?
6. Give the voice, mood, tense and number of the verbs in stanza 3; also tell whether they are transitive or intransitive, and why.
7. Name the adjectives in stanza 3, and tell what the use of each is in the sentence.
8. Give the simple subject, the simple predicate, the complete subject and the complete predicate of the sentence in stanza four.
9. What part of speech is each of the following words? Give your reason for so classifying it:

   First stanza O'er, homeward.

   Fourth stanza those, many.
10. Select four verb-forms that are not used as simple predicates. As what part of speech is each used?

The purpose of the final test, for which fifty minutes were allowed, was to measure power to interpret the English language. This test was as follows:

1. Express in prose the thought of the stanzas given below.

   Use the language of the poem as far as possible.

   ("The stanzas given below" comprised that part of Gray's Elegy from "Perhaps in this neglected-- ------ to -------- "mercy on mankind.")

2. Give the thoughts of these four stanzas briefly in your own words.

Each test was scored by two expert markers, designated as A and B, and the results of each test were correlated with the results obtained on each of the other two. The co-efficients of correlation so obtained appear below:

Co-efficient of Correlation Between:	A's Marks	B's Marks	A's and B's Marks Combined	Average of A's and B's Marks Combined	Probable True Correl-ation
Grammar and Composition	.12±.047	.23±.045	.23	.18	.30
Grammar and Interpretation	.22±.045	.19±.046	.28	.21	.35
Interpretation and Composition	.27	.30	.32	.28	.41

Co-efficients of correlation vary between +1.0 and -1.0. The former indicates perfect positive correspondence between measurements on two scales (in this case, scores on two tests), the second indicates perfect negative correspondence. A score of 0.0 indicates absolutely no correspondence whatever. In general, co-efficients between zero and ±0.20 are regarded as

negligible; those between ±0.20 and ±0.40 indicate a low or slight correlation.

On the bases of these data Hoyt concluded that proficiency in any one ability tested does not depend on, or is not influenced by, any other ability tested. As will be shown below, it is doubtful if the data justify these conclusions.

THE RAPEER STUDY.

A few years later Rapeer (10) repeated Hoyt's study, using two hundred Minneapolis first-year high-school students, and having the tests graded by one marker only instead of two. The co-efficients of correlation which he obtained were as follows:

Between:	Obtained Correlation	Probable True Correlation
Grammar and Composition	.23	.30
Grammar and Interpretation	.10	.20
Interpretation and Composition	.24	.30

Rapeer found no reason to modify Hoyt's conclusions.

CRITICISMS

Hoyt's and Rapeer's entire testing program, possibly adequate by the then-existing criteria of testing techniques, is open to criticism in the light of more recently developed methods of educational testing.

In the first place, none of the tests used was standardized. Reliability and validity were both unknown. The scores obtained depended largely upon the subjective judgments of the marker, and such judgments are notoriously unreliable. The subjective element is particularly strong in the first and third tests, but is by no means absent from the second.

Secondly, the conclusions are open to criticism on the basis of the statistical treatment of the scores. Hoyt and Rapeer obtained their co-efficients of correlation by the Pearson product-moment method, a method which involves the assumption that scores on the tests being correlated are truly quantitative measures, as are the measurements used in the physical sciences. In physics, 100 inches is always exactly twice 50 inches, but in subjective educational measurements such as used by these two investigators, a score of 100 seldom means exactly twice as much proficiency as a score of 50. Thus Hoyt and Rapeer were not justified in using the Pearson method.

Scores on objective educational tests depend wholly on the students' achievements, not at all on the subjective estimates and impressions of the examiner. Therefore objective tests are much more nearly quantitative instruments of measurement than are subjective tests, especially if they have been scaled, as was the Hudelson test (See Chapter v, page 39)

Also, these investigators did not test the significance of their co-efficients by computing their probable errors. Without knowing these probable errors, it is impossible to say whether their correlations have any statistical significance.

Each investigator has given figures that purport to be "probable true correlations." How their figures were obtained we are not informed. It appears probable that they represent nothing more than best guesses. As will be shown later, a sound statistical method for obtaining true correlations is now available.

In the third place, the form of the material on which the second and third tests were based may be criticized. To the average Grade IX student, poetry presents many difficulties other than those associated with grammar, difficulties which themselves become part of the test. The inversion of the word order to fit the content to the rhythm and metre of the stanza, the use of poetical expressions, and similar factors, tend to put the student at a disadvantage from the outset.

Finally, the problem is stated in too broad terms. Instead of, "Does the study of formal grammar in the elementary school help children----?", it should be stated somewhat as follows, "Does the study of formal grammar as commonly taught now in the elementary schools of Indianapolis (or Minneapolis) help children ----?" In a later chapter this writer will endeavor to show that when the traditional method of teaching formal grammar is replaced by a much less formal method, the results are somewhat different from those obtained by Hoyt and Rapeer.

THE SEGAL AND BARR STUDY

In May, 1926, about twenty years after Hoyt made his study of grammar, Segal and Barr (11) gave tests in formal and applied grammar to 304 high school sophomores and juniors. Each test consisted of one hundred items. No information is given as to the type of test used to measure formal grammar, but the first two items of the applied grammar test were as follows:

(1) I (can't, can) hardly see it.

(2) James (done, did) his work yesterday.

The student was required to underline the correct response.

The co-efficient of reliability for the applied grammar test was 0.84; for the formal grammar test, 0.94. These co-efficients were found by correlating the scores on the odd-numbered items against those on the even-numbered items, and applying the Spearman-Brown prophecy formula. No information is given about the validity of the tests, except that the investigators say that validity of the applied grammar test was satisfactory to a group of high school teachers.

Some correlation co-efficients obtained by Segal and Barr, using the Pearson product-moment formula, appear below:

Applied grammar scores vs. grammar marks given by teachers	.65
Formal vs. applied grammar scores	.56
Formal vs. applied grammar scores (intelligence held constant)	.48
Formal grammar vs. intelligence scores	.40

The authors present also the following table to show how the average scores on the formal and applied grammar tests vary according to the high-school grade in which the students are placed.

Average Score in:	Grade		
	Low Sophomore	High Sophomore	Low Junior
Formal Grammar	74.4	72.4	67.4
Applied Grammar	75.7	76.0	80.0

According to these scores, English usage improves, but knowledge of formal grammar decreases.

On the basis of these results these investigators conclude that the relation between proficiency in formal grammar and proficiency in applied grammar is so slight as to be negligible. The extent of the correlation existing between the scores on formal and on applied grammar tests they attribute to factors common to all high school subjects. In support of this view-point they present the following coefficients of correlation obtained by correlating scores on certain subjects:

Between:

English and total score in mathematics and science	.50
Foreign language and total score in mathematics and science ----------	.56
English and foreign language ----------	.446

CRITICISMS

Segal and Barr state that their conclusions are based upon three 'assumptions', as the authors call them. These are:

1. That the formal grammar has been taught so that maximum transfer, if any, is obtained.
2. That the tests are valid.
3. That formal grammar has no transfer to other high school subjects.

For the moment we may disregard the second, although it is difficult to see how the statistics they present support this assumption, as they claim they do. But the first and third seem unwarranted. The authors admit that they have no information as to the validity of the first assumption. Before one could know whether formal grammar was taught to obtain maximum transfer value, it seems that a study would have to be made of the effect of teaching grammar; by employing different methods, by teaching different bodies of material, by teaching to different age levels, and by otherwise varying the programme of teaching the subject. Essentially this assumption is the same as that made by Hoyt and by Rapeer, although they did not seem to be aware that they were making it.

With regard to the third assumption, it would seem that Segal and Barr have assumed as a starting point the conclusions they ultimately reach. If formal grammar is to have transfer value in writing good English, the same transfer should appear if the written English were an assignment in history or in science.

The fact that scores in formal grammar decrease whereas those in applied grammar increase the further one goes in high

school may not mean that all formal grammar is non-functional. It may simply mean that some formal grammar facts are forgotten because they are seldom or never needed, whereas others gradually become functional and help to increase the students' facility in written English.

That Segal and Barr should obtain such high correlations between different subjects appears remarkable in view of the fact that this investigator, in common with many others, has obtained much lower correlations from tests given over a much narrower field.

THE FROGNER STUDY

Ellen Frogner (12) made a study of 2821 compositions written by hundreds of students in Minneapolis schools. The students were divided into grade groups as follows:

Grade	No. of pupils	Median I.Q.
VII	290	107.56
IX	379	105.88
XI	290	103.81

She found that there was consistently less progress from grade VII to IX than from IX to XI, despite the fact that the former period is the period when most time and emphasis are given to grammar.

CRITICISM

Frogner does not present statistical data regarding the results of the composition themes, or any information as to how they were graded, nor does she tell us how she arrived at her belief that the period when grammar is most emphasized is

that from Grade VII to IX. No effort is made to determine what other factors might have contributed to the slowness of progress from Grade VII to IX as compared with the period from Grade IX to Grade XI.

SUMMARY

The basic weakness of the different reports analyzed above seems to be that their authors believe formal grammar can be taught only by the traditional formal methods in vogue since the time of the Romans. That grammar so taught is largely non-functional is not denied by this investigator; but that grammar might be taught by other methods and become largely functional does not seem to have occurred to the men and women whose reports are studied in this chapter.

REFERENCES

(9) Franklyn S. Hoyt: The Place of Grammar in the Elementary School Curriculum - Teachers' College Record, November 1906.

(10) Louis W. Rapeer: The Problem of Formal Grammar in Elementary Education - Journal of Educational Psychology, March 1913 - Vol. IV, No. 3.

(11) David Segal and Nora Barr: Relation of Achievement in Formal Grammar to Achievement in Applied Grammar - Journal of Educational Research, December 1926, Vol. 12, No. 5.

(12) Ellen Frogner: Problems of Sentence Structure in Pupils' Themes. English Journal, Vol. XXII, No. 9.

CHAPTER V

TESTS AND TECHNIQUES.

To determine whether proficiency in formal grammar correlated at all with proficiency in reading and writing good English and with the power to discriminate between good prose and poor, adequate tests to measure not only proficiency in grammar but also proficiency in the other three aspects of English had to be found or made.

No suitable tests in grammar could be discovered, and it was accordingly necessary to devise two tests in this field. One of these was intended to measure ability to perceive grammatical relationships; the other, knowledge of grammatical terminology.

As a measure of reading ability the investigator used a Vocabulary Test prepared by Dr. H. E. Smith and himself. This test had the advantage of having been prepared for and standardized for Alberta students.

A large number of composition scales are available, and the matter of choice in this field presented little difficulty. The instrument chosen to measure ability to write good English composition was the Hudelson Prose Composition Scale.

To test power to discriminate between good prose and poor, the Carroll Prose Appreciation Test was used.

The battery, then, comprised five tests, which were intended respectively to measure:

I Skill in grammatical analysis

II Knowledge of grammar terminology

III Extent of reading vocabulary

IV Ability in English composition

V Taste in English prose.

A description of each test follows.

I Test of Grammar Analysis

To measure the students' ability in grammar analysis, a test was constructed in terms of the following criteria:

(a) The test should be wholly objective.

(b) The test should be quickly and easily marked.

(c) The test should test ability to perceive grammatical relationships, and should not be a test of terminology.

(d) The test should have two equivalent forms.

(e) The test should be reliable.

The test was made wholly objective by making all items in the test of the multiple-choice type. For each item one stimulus word is presented to the student, who has to choose the correct response word from a choice of four or five. As recall and completion tests are never wholly objective, it was not possible to include exercises in parsing, the marking of a parsing test always being at least partly subjective.

Economy in marking the test was accomplished, the answers to all items taking the form of figures 1 to 5 arranged in a column on the right-hand edge of the paper.

To produce two equivalent forms of the test was rather difficult. Form A of the test was based upon "The Legend of Sleepy Hollow" by Washington Irving. Irving's sentence

structure was found to be sufficiently complex to illustrate not only simple and elementary points of formal grammar, such as the distinction between a noun and a verb; but such subtle and involved points as the apposition of a clause with a noun.

In preparing Form B, it was obviously futile to hope to find illustrative passages that would parallel those of Form A. Therefore passages were constructed to produce the desired parellelism. It was thus possible to test words, phrases, and clauses in almost identical constructions in the two forms.

There are three generally accepted methods of determining the co-efficient of reliability of a test. These are (a) by giving the same population the same form of a test twice and correlating the scores, (b) by giving the same population different forms of a test and correlating the scores, (c) by giving one form of a test once and correlating scores on chance halves of the test. Of these three methods, the second is usually conceded to be the best. The existence of equivalent forms of the grammar analysis test made this second method possible. Fifty high school and university students wrote Forms A and B of the test. The correlation between these scores was found to be +.84, which may be taken as the co-efficient of reliability of the test.

Forms A and B of the Test of Grammar Analysis appear in the appendix.

II Test of Grammar Terms

Originally it was planned to use only the analysis test to measure students' proficiency in grammar. However, for three reasons a grammar terminology test was added. In the first place, Rivlin lists as one of the reasons for the study of grammar that "it provides the pupil with an indispensable terminology." (See Chapter III.) Although Rivlin does not state what this terminology is indispensable for, it was decided to use the terminology test in an effort to discover how indispensable such a knowledge is to ability to write correct English.

Secondly, this writer has found that a knowledge of terminology is of value in the classroom in the correction of written English. If a student knows the meaning of such terms as 'subject', 'predicate', 'agreement', 'possessive', 'singular', 'plural', 'direct object', 'indirect object', he will, when he makes a grammatical error, the more readily understand an explanation of his error, and the reason for using the correct expression.

The third reason for preparing this test was to provide a check on the results obtained from the Test of Grammar Analysis.

The test itself consists of fifty items of the True-False type, arranged approximately in ascending order of difficulty. The final score was obtained by the formula

$$S = R - W$$

(Final Score) (No. of items right) (No. of items wrong)

The test itself appears in the appendix.

As one form only of this test was designed, and but once administered, the only way of determining the reliability of the test was by correlating the scores from chance halves of the test. This was done for one hundred students. As the co-efficient of correlation between two tests, each consisting of twenty-five items, the Spearman-Brown prophecy formula

$$r = \frac{Nr_o}{1 + 2r_o}$$

where r = True co-efficient, r_o = Obtained co-efficient, N = No. of cases

was used to derive the co-efficient of reliability for the same test extended to include fifty items, i.e., the test actually ministered to the students. The co-efficient of reliability so obtained is $0.79 \pm .03$.

III Vocabulary Test

To measure vocabulary extent and reading ability a test constructed by J. W. Chalmers and Dr. H. E. Smith was used. The details of the construction and standardization of this test, and the test itself, are presented in the appendix.

The test was designed primarily as a measure of vocabulary extent, and used in that capacity, its reliability was found to be $0.89 \pm .008$. It may therefore be regarded as a testing instrument of relatively high discriminating power.

It was found, moreover, in administering the test to students who sat also for the Stanford Reading Tests, that

co-efficients of correlation between vocabulary and reading scores were notably high. That between Vocabulary and Paragraph Meaning was 0.78 ± .020, and between Vocabulary and Word Meaning 0.85 ± .014. These two parts of the New Stanford Achievement Tests, viz., Paragraph Meaning and Work Meaning, are known to yield reading scores of very high validity and reliability. Another test of equally good repute is the Thorndike Word Knowledge Test. The co-efficient between scores on this test and on the vocabulary test proved to be 0.91 ± .011. In view of these facts we have felt justified in assuming that our obtained vocabulary scores are also reasonably good measures of reading ability. Wherever, in the sequel, reference is made to reading scores, it will be understood that they are scores based on the Vocabulary Test.

IV Hudelson English Composition Scale

To test ability in written composition, each student was asked to write a composition in narrative form on the topic, "The Most Exciting Ride I Ever Had." The compositions were then evaluated according to the First Revision of the Hudelson English Composition Scale.

The Hudelson Scale consists essentially of sixteen compositions of which all but two were written by school children. The scale consists of the compositions arranged in order from least to greatest merit. The compositions were chosen from a much larger number by a group of skilled examiners. The basis for the scale value assigned

to each sample is the psychological principle that equal differences are equally often observed. The merit of each composition is indicated by arbitrary units assigned to each composition in the scale, as 0.5, 1.0, 1.5 -------- 9.5. Thus the sample rated as having a value of 1.0 is claimed by Hudelson to have exactly twice the merit of that valued at 0.5, and one half the merit of that valued at 2.0, units of the scale. Thus the scale claims to be a quantitative measure of composition merit.

In use, the composition being evaluated is compared with the samples in the scale and its value assigned, after careful comparison, to the nearest tenth of a unit. Obviously, although the scores obtained on the scale may be quantitative measures, they are not wholly objective. It is to be remarked, however, that this writer has previously, in another connection, scored several hundred papers of high school students, his results being checked by a collaborator in the work. This type of experience, according to Hudelson, tends definitely to increase the accuracy of the scoring.

V Carroll Prose Appreciation Test.

To test the power to discriminate between samples of English prose of various degrees of literary excellency, the students in this study wrote the Carroll Prose Appreciation Test. (13 and 14) This test has two forms. The Junior High School Form was used in Grade IX, the Senior in Grades X, XI, and XII.

The two tests together include fourteen sets of continuous prose. Ten of these sets constitute the Junior High School form, twelve the Senior. Eight sets are common to both forms. Concerning the selections, the author in his Examiner's Manual says:

> "Those used were taken from four sources: first choices, from books generally regarded as of excellent quality; second choices, from books generally regarded as of poor quality; third choices, from the less literary magazines, fourth choices, from multilations. A sample set (No. III in the senior test) follows:
>
> AN INTERIOR
>
> A
>
> "I went with the little maid into a gorgeously decorated bedroom, all of cream color and light blue that blended prettily. The bed was a great, wide affair of beautifully carved and ornamented wood, painted creamy white with blue and gold trimmings. There was a wonderful bureau and a dressing table to match, and in one corner of the room a mirror that went from floor to ceiling. I had to hold my breath."
>
> B
>
> "Lollie had never seen such a pretty room, and it made her gasp to see how pretty the furniture was, as well as how pretty the rugs were, and the curtains at the windows and the pictures on the wall, but what she really liked best was that furniture, for it looked comfortable as well as pretty, and she knew it must have cost hundreds and hundreds of dollars. She wished she could live and die in that one room, it was so pretty."
>
> C
>
> "An air of Sabbath had descended on the room. The sun shone brightly through the window, spreading a golden lustre over the white walls; only along the north wall, where the bed stood, a half shadow lingered...The table had been spread with a white cover; upon it lay the open hymn book, with the page turned down. Beside the hymn book stood a bowl of water; beside that lay a piece of white cloth ....Kjersti was tending the stove, piling the wood in diligently....Sorine sat in the corner, crooning

over a tiny bundle; out of the bundle at intervals came faint, wheezy chirrups, like the sounds that rise from a nest of young birds."

D

"Major Prime had the west sitting-room. It was lined with low bookcases, full of old, old books. There was a fireplace, a winged chair, a broad couch, a big desk of dark seasoned mahogany, and over the mantel a steel engraving of Robert E. Lee. The lowwindows at the back looked out upon the wooded green of the ascending hill; at the front was a porch which gave a view of the valley."

The task assigned to the student is to arrange these selections in order of literary merit. One reason for choosing this test was that it is a test of prose appreciation, and its form is therefore more like the form of the students' own written English than is the poetry form on which most tests of literary appreciation are based.

Another reason is that the co-efficients of reliability for the two forms are much higher than those of other appreciation tests. The co-efficients of reliability were 0.71 ± .016 and 0.70 ± .019 for the Senior and Junior forms respectively. The co-efficient of reliability for the Abbot Trabue Poetry Test is 0.44. This is typical of the reliability co-efficients of other literary appreciation tests.

The author does not give any co-efficient of validity for his test, but states that its validity was satisfactory in the opinion of sixty-five expert judges.

The Senior form of the test was standardized by administering it to one thousand students each in Grades X, XI, and XII. The Junior Form was standardized on the basis of four hundred scores each in Grades VII, VIII and IX. No use of the norms was made in this study.

REFERENCES

(13) H. A. Carroll: A Standardized Test of Prose Appreciation for Senior High School Pupils. Journal of Educational Psychology, Vol. XXIII, page 401.

(14) H. A. Carroll: A Standardized Test of Prose Appreciation for Junior High School Pupils. Journal of Educational Psychology, Vol. XXIII, page 604.

CHAPTER VI

THE SCHOOLS, STUDENTS, AND TIME OF TESTING

Six hundred and three students wrote at least two of the five tests in the series, while an additional few wrote one test only. These six-hundred-odd students were mainly scholars of small high schools, one or two rooms, but eighty-three students were attending Grade IX at the Highlands School in Edmonton. The distribution of the students throughout the different schools is indicated in Table 1.

These pupils probably represented a fairly average cross-section of the high school population of Northern Alberta. Many of the children came from homes where a language other than English is spoken. The students of Willingdon, Calmar, Two Hills especially were from foreign homes. In all, 180 students, or 30 per cent, spoke other tongues than English at home. The main foreign language was Ukrainian; but French, German, Polish, Norwegian, Jewish, Slovak, Swedish, and Rumanian were also listed. In 1931, the census of Canada (15) reports that of 572,129 people in Alberta over the age of ten, 210,981 spoke at least one language other than English. This is about 38 per cent, somewhat higher than the proportion of the population tested in this study.

That this factor of bilingualism has an adverse effect on the child's mastery of English is indicated by a previous investigation (16) undertaken by the writer. In this study,

TABLE I

DISTRIBUTION OF POPULATION STUDIED

BY SCHOOL AND GRADE

SCHOOL	GRADE				TOTALS BY SCHOOL
	IX	X	XI	XII	
Fort Saskatchewan	16	15	13	15	59
Bruce	7	3	6	7	23
Holden	14	16	11	8	49
Bawlf	9	8	7	9	33
Daysland	9	9	15	13	46
Highlands (Edmonton)	83				83
Rose Hill (Calmar)	9	5	5	11	29
Paradise Valley	7		12		19
Viking	16	18	10	11	48
Munson	7	11	2	13	33
Willingdon		12	19	26	57
Two Hills	11	16	12	8	47
Totals by Grade	201	127	129	146	603

however, no attempt has been made to measure the influence of bilingualism upon language skills in English.

Another factor which might conceivably influence ability in such a field as formal grammar is sex. However, it has been found to exert no appreciable influence on such skills as reading, so one may assume that it does not influence ability to perceive grammatical relationships

Five tests of the six-test battery were administered consistently in the same sequence, viz., first, the Hudelson Composition test, then the Vocabulary, Grammar Terms, and Grammar Analysis test - Form A. The two grammar tests were administered in one or in two sequent class periods, as the convenience of the teacher dictated. With this exception, all tests were written on separate days.

The material for the Carroll Prose Appreciation Test is contained in a small booklet, the answers being written on a separate answer sheet. Only forty booklets for each of the Junior and Senior High School forms were purchased. These were sent from school to school and administered to the students whenever most convenient. In the majority of cases this was after the other five tests had been written.

In about half of the schools co-operating in this study, the composition assignment was written during the third week of December, 1939. In the other schools, it was written in January, 1940. The testing programme continued throughout January and February, 1940; and in a few cases was not completed until March.

These winter months did not constitute the best time of the year for such an investigation, as many students were absent from school at various times, thus missing one or more of the tests. In one case the testing was help up for two weeks because so few pupils were present. In another, the school was closed for a fortnight by reason of a scarlet fever epidemic.

In a few cases, students who missed one test wrote it on their return to school. It was felt, however, that school principals or teachers could not fairly be asked to give any one test more than once. Since their co-operation was wholly voluntary, the writer did not wish to make their share in this project an unwelcome and onerous task.

REFERENCES

(15) 1931 Census of Canada, Vol. IV, page 1161 et seq.

(16) J. W. Chalmers: Factors Affecting the Command of English, A.T.A. Magazine, Dec. 1935.

CHAPTER VII

STATISTICAL DATA: GRAMMAR TESTS

In this chapter is presented a summary of the data obtained from the administration of the grammar tests to our high school population.

The Grammar Analysis Test consists of two forms, A and B, the equivalence of which will be discussed below. Form A was administered to 553 students in Grades IX to XII inclusive. Form B was devised primarily as an instrument to test the reliability of Form A. It has not been nearly so widely administered as Form A, viz., to only 145 students in Grades X to XII inclusive.

The Test of Grammar Terms appears in only one form. The data from this test are based upon the scores of 560 students in Grades IX to XII inclusive.

(a) Test of Grammar Analysis - Form A

The distribution of scores obtained from Test A is presented in Table II(a) below, and the usual statistical constants are shown in Table II(b) immediately following.

TABLE II

TEST OF GRAMMAR ANALYSIS

(a) DISTRIBUTION OF SCORES

Score	Grade IX	X	XI	XII	Total
51-55				2	2
46-50			1		1
41-45			3	11	14
36-40	2	3	14	20	39
31-35	3	9	22	35	69
26-30	21	25	32	33	111
21-25	47	32	32	20	131
16-20	74	41	19	10	144
11-15	27	8	3		38
6-10	3				3
0- 5	1				1
Total by Grades	178	118	126	131	553

(b) STATISTICAL CONSTANTS

	IX	X	XI	XII
Mean	19.4	22.3	26.9	30.5
Standard Deviation	5.32	5.60	7.08	7.32
First Quartile	15.91	17.62	21.47	25.04
Median	18.92	21.56	26.41	30.36
Third Quartile	22.71	26.50	31.71	35.32
Semi Inter-Quartile Range	3.40	4.44	5.12	5.14

The range of scores was from 5 to 53; the mean for the total group being 24.0, and the median 22.5. It will be observed that the grade means rise from 19.4 for Grade IX to 30.5 for Grade XII, the medians maintaining a close parallel throughout.

Characteristic of such grade scores, the amount of overlapping is considerable. Computations from Table II(a) show that 28.9% of the Grade IX scores exceed the mean for Grade X; 10.1% exceed the mean for Grade XI; and 1.3% exceed the mean for Grade XII. Similarly 0.9% of the Grade XII scores fall below the mean for Grade IX, 7.0% fall below the mean for Grade X, and 32.5% fall below the mean for Grade XI. This overlapping is shown graphically in Figure 3 on page 52.

The data of Table II(a) have been thrown into graphical form in Figures 1, 2, and 3. Figure 1 shows the frequency polygon of the scores of the four grades combined; Figure 2 the scores for the separate grades, and Figure 3 the scores for the separate grades presented on a common base line to indicate the degree of overlapping. The quartile points and means of Table II(b) are presented graphically in Figure 4.

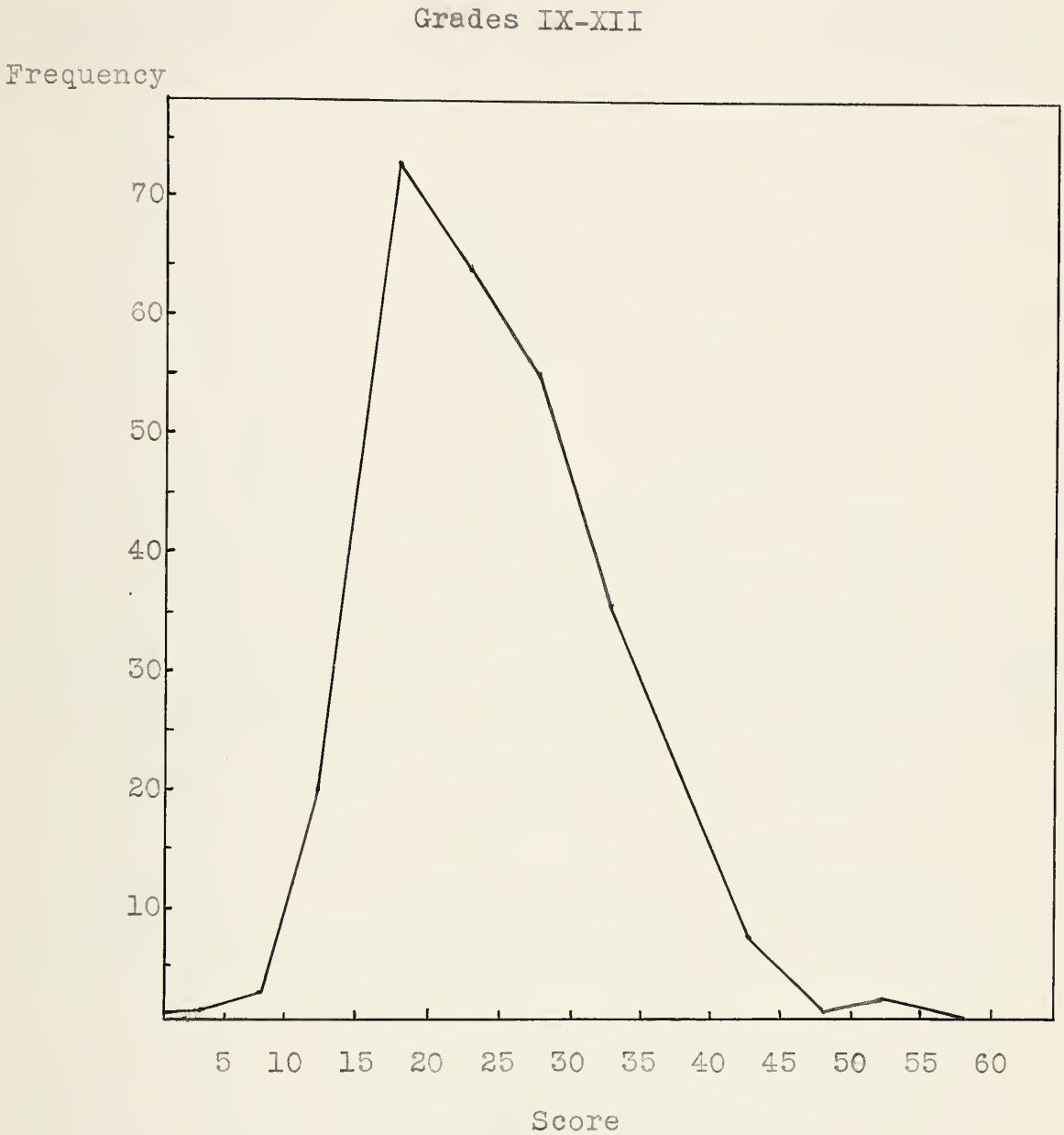

Figure 1.- Test of Grammar Analysis - Frequency Distribution

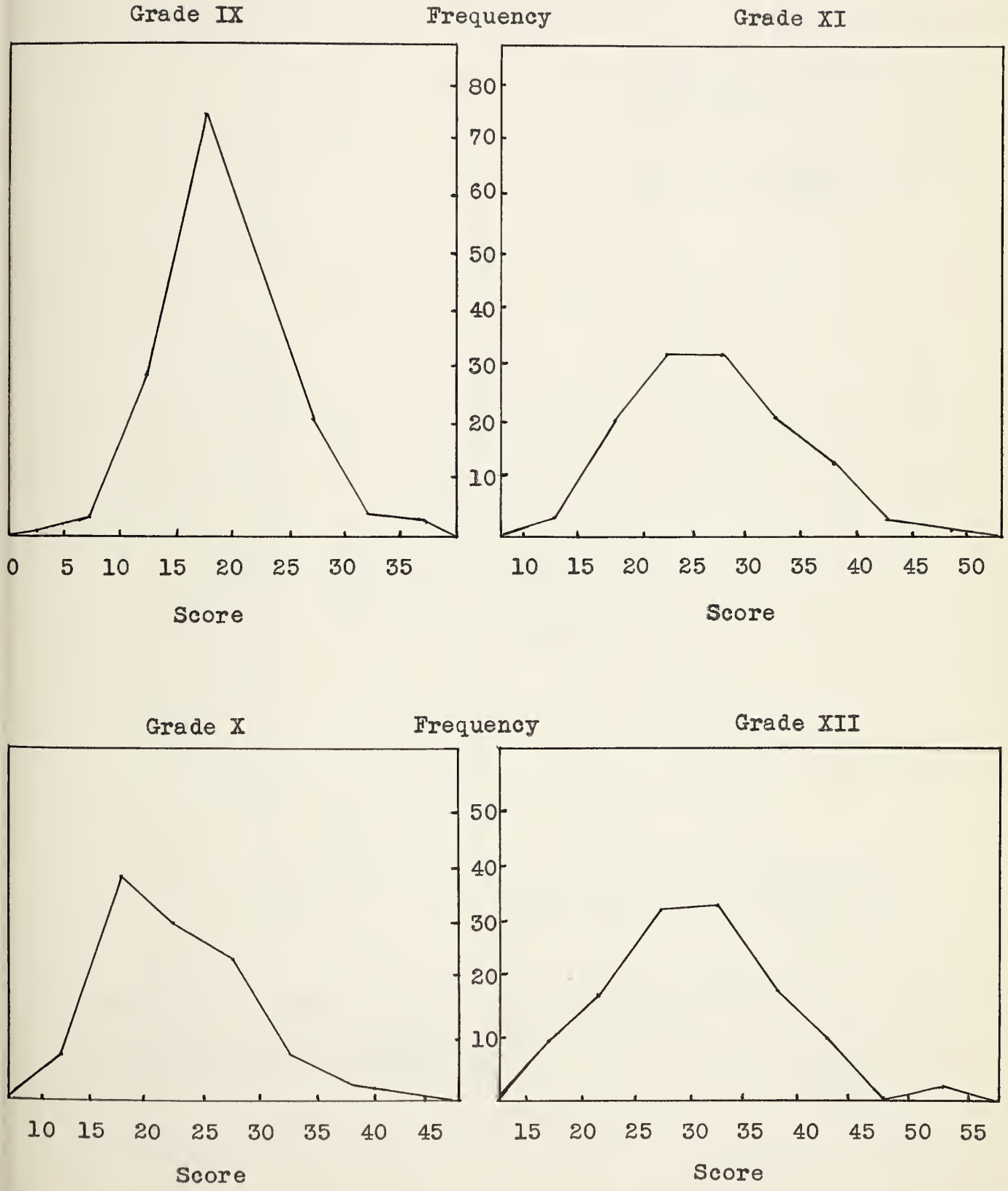

Figure 2.- Test of Grammar Analysis - Frequency Distribution by Grades

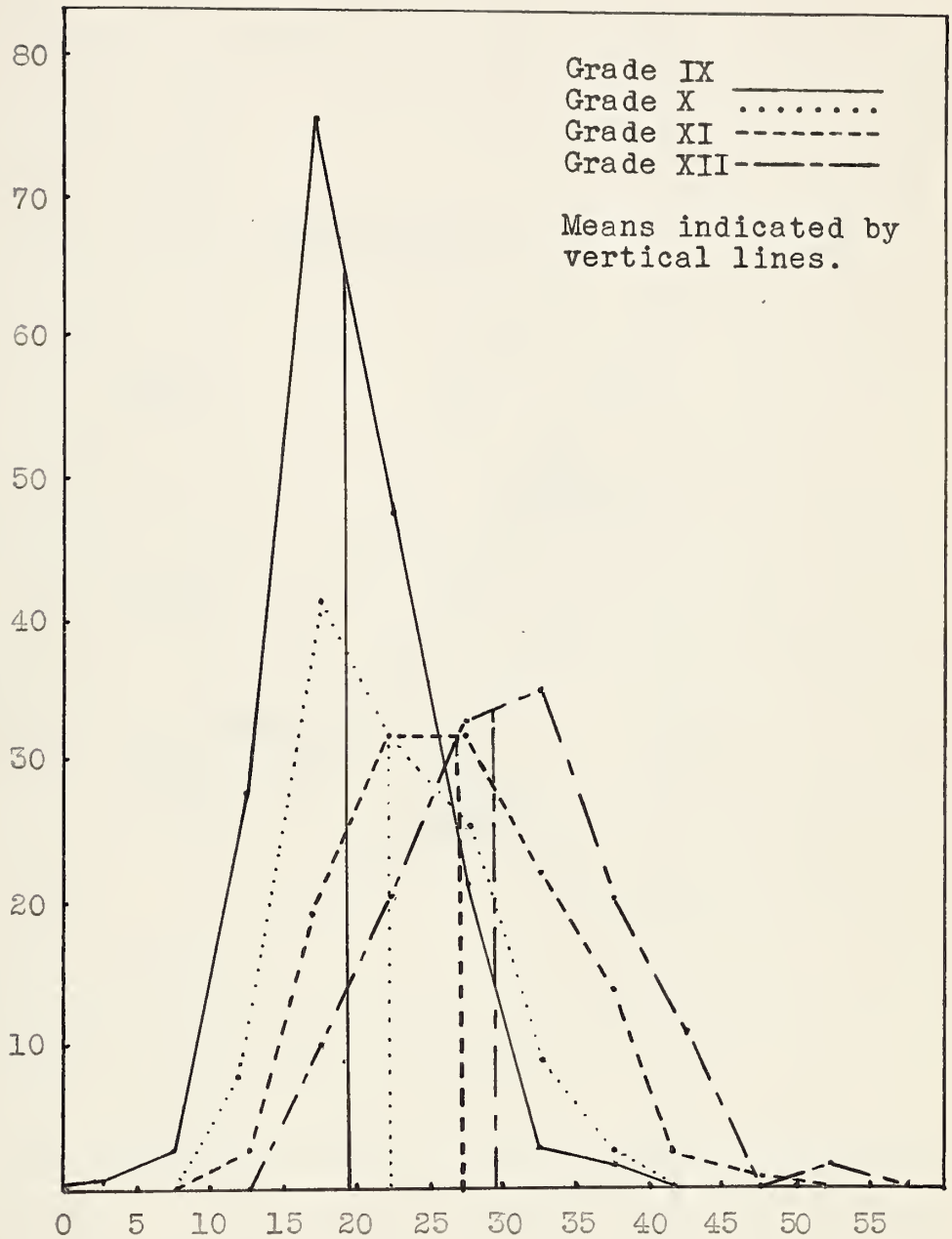

Figure 3.- Grammar Analysis - Distribution of Scores in Grades IX - XII on Common Base.

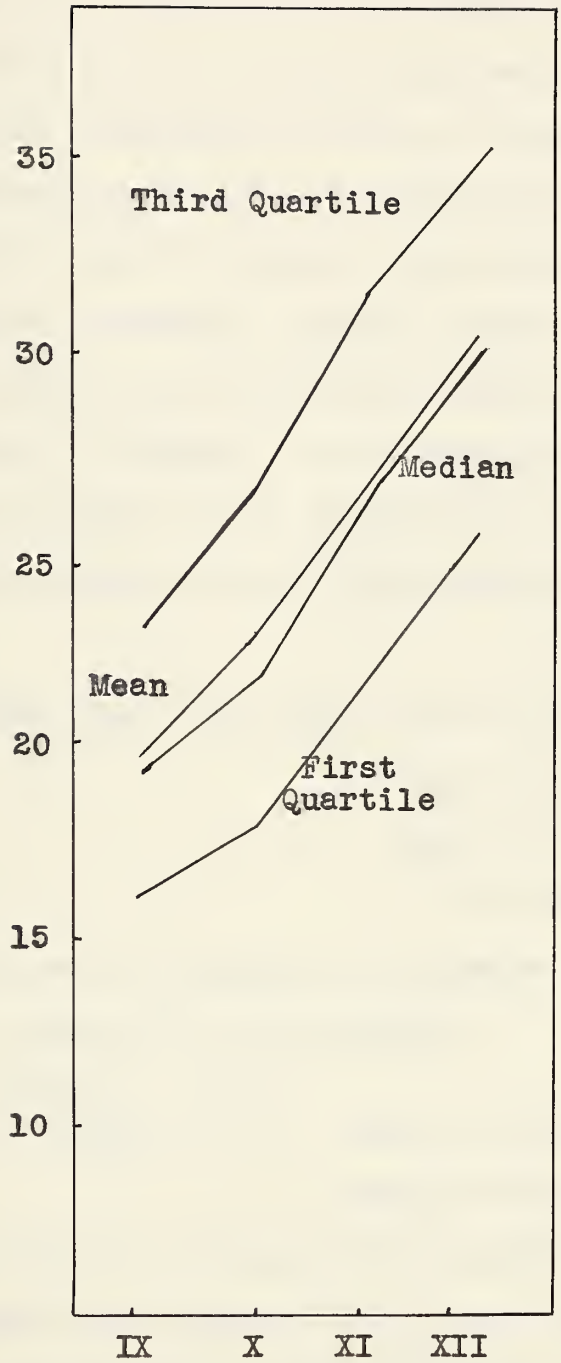

Figure 4.- Test of Grammar Analysis - Mean and Quartiles

The frequency polygons for each grade are all approximations to the curve which would be obtained under the laws of probability. Each is unimodal and has the mode approximately in the centre of the distribution, which tapers off to a zero frequency at either extremity. The test is satisfactorily graded as to difficulty in that no student was able to obtain a perfect score, but all students were able to achieve something, however little. The test separates the students fairly well according to their respective abilities. However, the distribution for each graded is somewhat skewed, as an examination of Figure 2 will show. This skewness for each grade has been measured by the equation

$$Sk = \frac{(P_{90} - P_{10})}{2} - P_{50}$$

where P_{90} is 90th percentile.
P_{10} is 10th percentile.
P_{50} is 50th percentile or median.

The standard error for the measure of shewness given by the above equation is obtained by the equation

$$\sigma sk = \frac{.5185(P_{90} - P_{10})}{\sqrt{N}}$$

where N is the number of cases in the distribution.

The quotient $Sk/\sigma sk$ is known as the critical ratio. Should this critical ratio equal 3.0 or more, it is a virtual certainty (999 chances out of 1000) that the skewness of our sample distribution is significant or represents a true skewness in the population from which it is drawn, i.e., the

obtained skewness is not due to chance. The data regarding the skewness of the distributions in Grades IX to XII for the Test of Grammar Analysis are presented in Table III below.

TABLE III

SKEWNESS OF DISTRIBUTIONS OF GRAMMAR ANALYSIS TEST SCORES FOR GRADES IX TO XII INCLUSIVE

Grade	Skewness	Standard Deviation of Skewness	Critical Ratio	Chances of a Significant Skewness*
IX	+.83	.55	1.50	93/100
X	+1.22	.72	1.70	96/100
XI	-1.69	.665	-2.54	99/100
XII	-2.33	.55	-4.2	100/100

* From Table 34, page 213 H. E. Garrett - Statistics in Psychology and Education.

From Table III it appears that the distributions are all rather definitely skewed; to the right for Grades IX and X, to the left for Grades XI and XII. Such skewness as here appears may be due to faults in the test or to chance errors due to the relatively small populations for each grade, but the fact that the skewness moves from right to left as we proceed from Grade IX to Grade XII is also important. From this fact we may assume that the test is a little too difficult for the two lower grades,

a little too easy for the two upper grades. This is what might be expected for a test designed to be administered over a wide range of four grades and shows the test to be well constructed. Had the distribution been skewed either to the right or to the left for each of the four grades, the test would have been respectively too difficult or too easy for each of the grades.

(b) Grammar Analysis Test - Form B.

Form B of the Grammar Analysis Test has as yet been administered to only 145 students in four high schools: Victoria (Edmonton), Drumheller, Mundare, and Peace River. This number is insufficient to establish independent norms for this form of the test, but is large enough to provide a means of obtaining the co-efficient of reliability of the test and to learn something of the equivalence of the two forms of the test. Data relevant to Form B of the test appear below in Table IV.

TABLE IV

GRAMMAR ANALYSIS TEST - FORM B

STATISTICAL CONSTANTS

Grade	No. of Cases	Mean-Form B	Corresponding Mean-Form A*
X	24	31.4	22.3
XI	89	39.3	26.9
XII	32	36.8	30.5

* From Table II(a)

As the means for Form B are much higher than the corresponding means for Form A, it would at first appear that Form B is much the easier of the two. This is not necessarily so, however, as Form B was administered in 1936 and 1937, when grammar was still an important subject on the high school program; whereas Form A was administered in 1940, after the curriculum had been greatly revised.

A group of fifty teachers and student-teachers wrote both forms of the test. On the basis of their results we are able to compute the co-efficient of reliability and determine whether the difference between their means on the two forms is significant. The relevant data are presented in Table V below.

TABLE V

GRAMMAR ANALYSIS TEST - FORMS A AND B

STATISTICAL DATA RELEVANT TO EQUIVALENCE

	Form A	Forms A & B	Form B
No. of Cases (N)		50	
Mean (M)	40.56		40.00
Standard Deviation (σ)	9.44		7.24
Probable Error of Mean (PE_M)	0.90		0.69
Mean Difference		0.56	
Probable Error of Mean Difference (PE_D)		0.50	
Co-efficient of Reliability (r)		0.835	
Probable Error of Co-efficient of Reliability (PE_r)		0.066	

The reliability co-efficient has already been discussed in Chapter IV - Tests and Techniques-and its significance need not again be discussed.

The formula by means of which the probable error of the mean difference was computed is

$$PE_D = \sqrt{PE_{MA}^2 + PE_{MB}^2 - 2rPE_{MA}PE_{MB}}$$

The probable error of the mean (PE_{MA} or PE_{MB}) is found by

$$PE_M = \frac{.6745\sigma}{\sqrt{N}}$$

For the mean difference to be considered as significant, i.e., to represent a true difference in difficulty between the two forms of the test, it should be at least four times as large as its probable error. However, as the mean difference above, 0.56, is very little larger than its probable error, 0.50, the difference in the mean scores on the two tests may be considered as due to chance factors, and the two forms as sufficiently equivalent to each other for all practical purposes.

(c) Test of Grammar Terms.

The distribution of scores obtained from the Grammar Terms Test is presented in Table VI(a) below, and the usual statistical constants appear in Table VI(b) immediately following.

TABLE VI

TEST OF GRAMMAR TERMS

(a) DISTRIBUTION OF SCORES

Score	Grade IX	X	XI	XII	Total
41-45			2		2
36-40					
31-35			4	7	11
26-30	7	8	17	25	57
21-25	24	18	19	26	87
16-20	45	31	42	27	145
11-15	48	30	39	27	144
6-10	36	26	9	13	84
0- 5	19	6	2	3	30
Totals by Grades	179	119	134	128	560

(b) STATISTICAL CONSTANTS

	IX	X	XI	XII
Mean	13.6	14.3	18.95	19.87
Standard Deviation	6.55	6.78	7.02	7.90
First Quartile	7.48	9.57	12.85	12.97
Median	13.60	14.30	17.02	18.89
Third Quartile	18.52	18.90	24.70	25.00
Semi Inter-Quartile Range	5.52	4.67	5.93	6.01
Co-efficient of Reliability (Spearman-Brown prophecy formula)				.79
Number of Cases				100

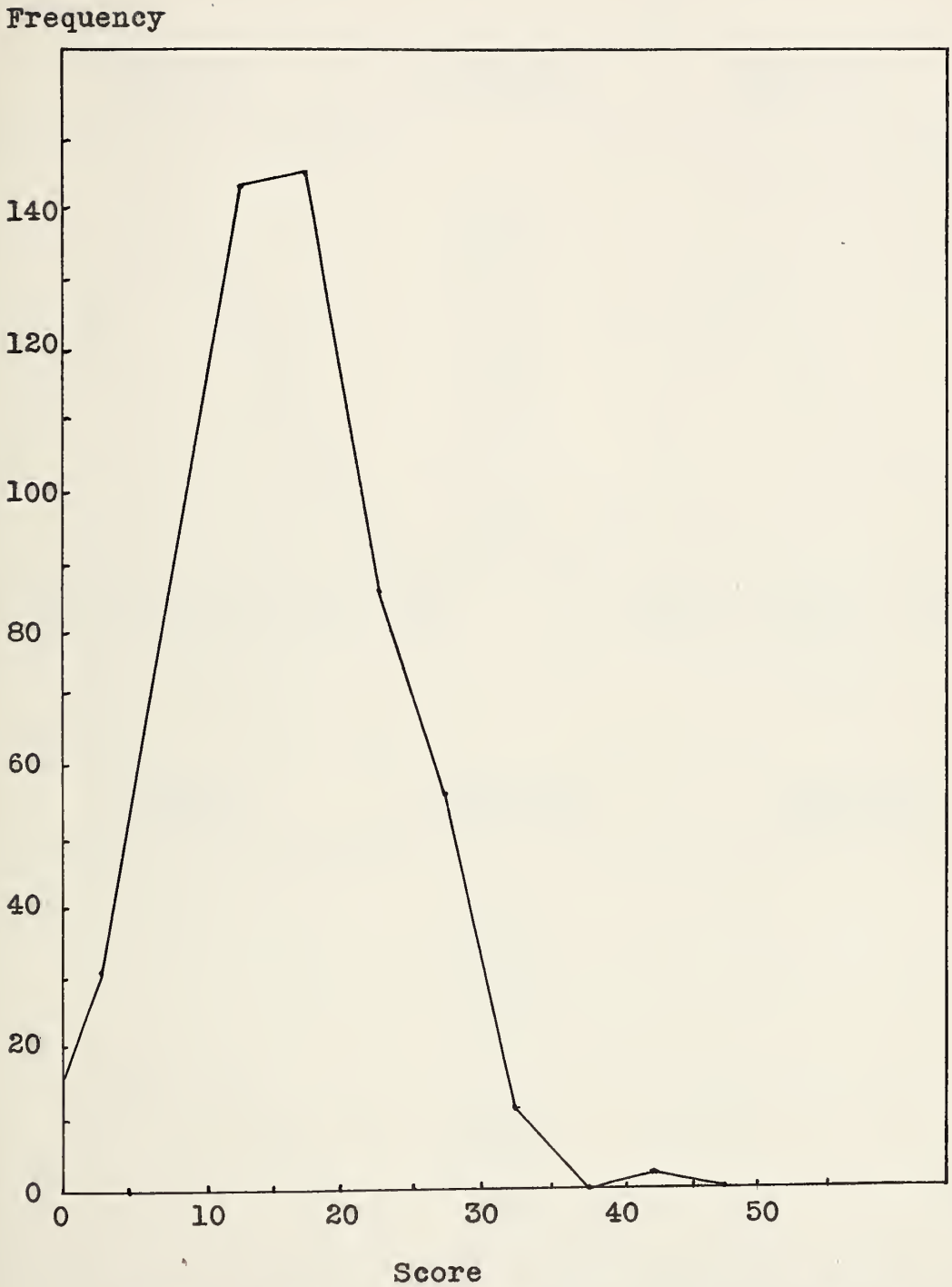

Figure 5.- Test of Grammar Terms-Frequency Distribution Grades IX - XII.

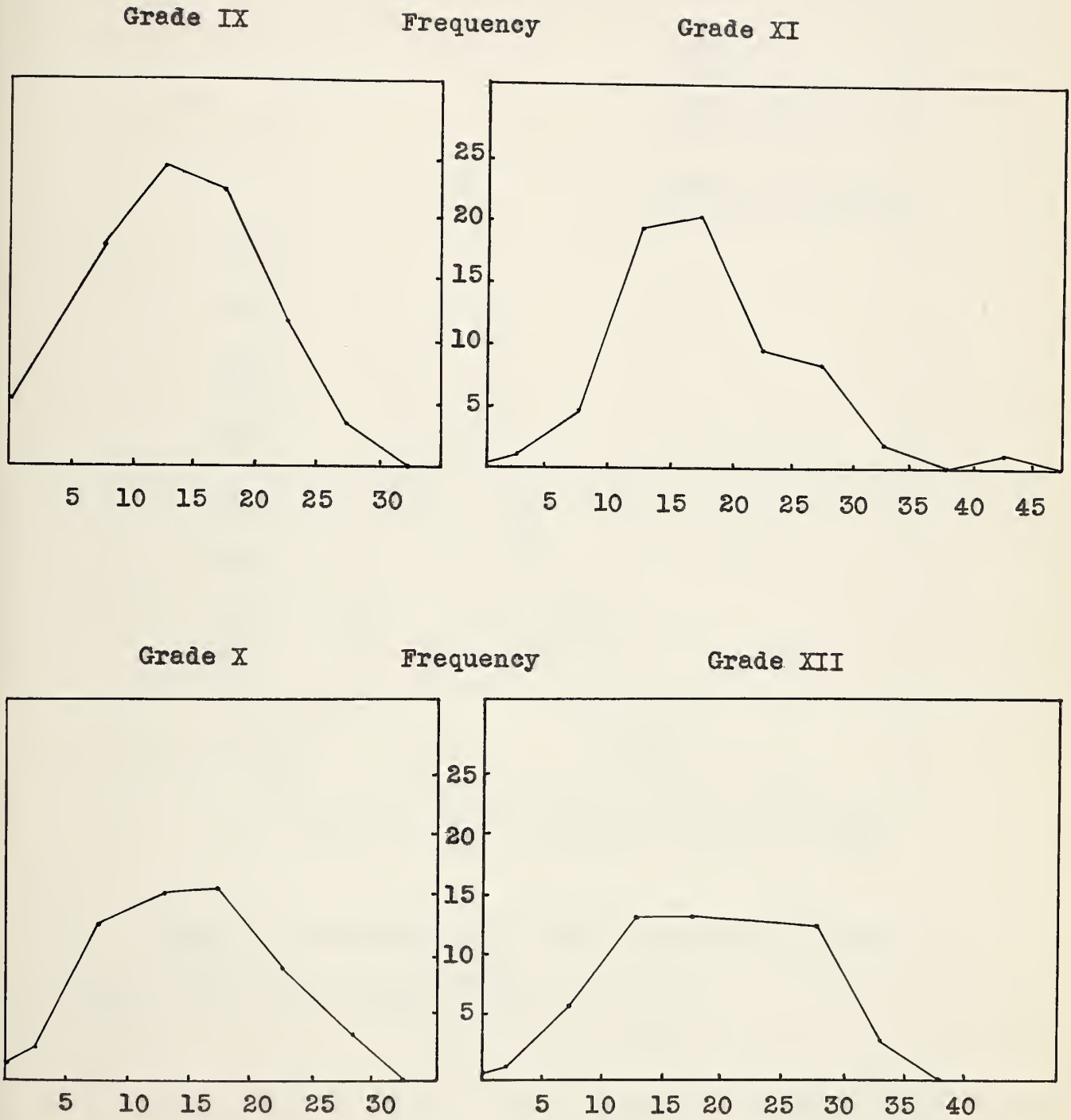

Figure 6.- Test of Grammar Terms - Frequency Distribution by Grades

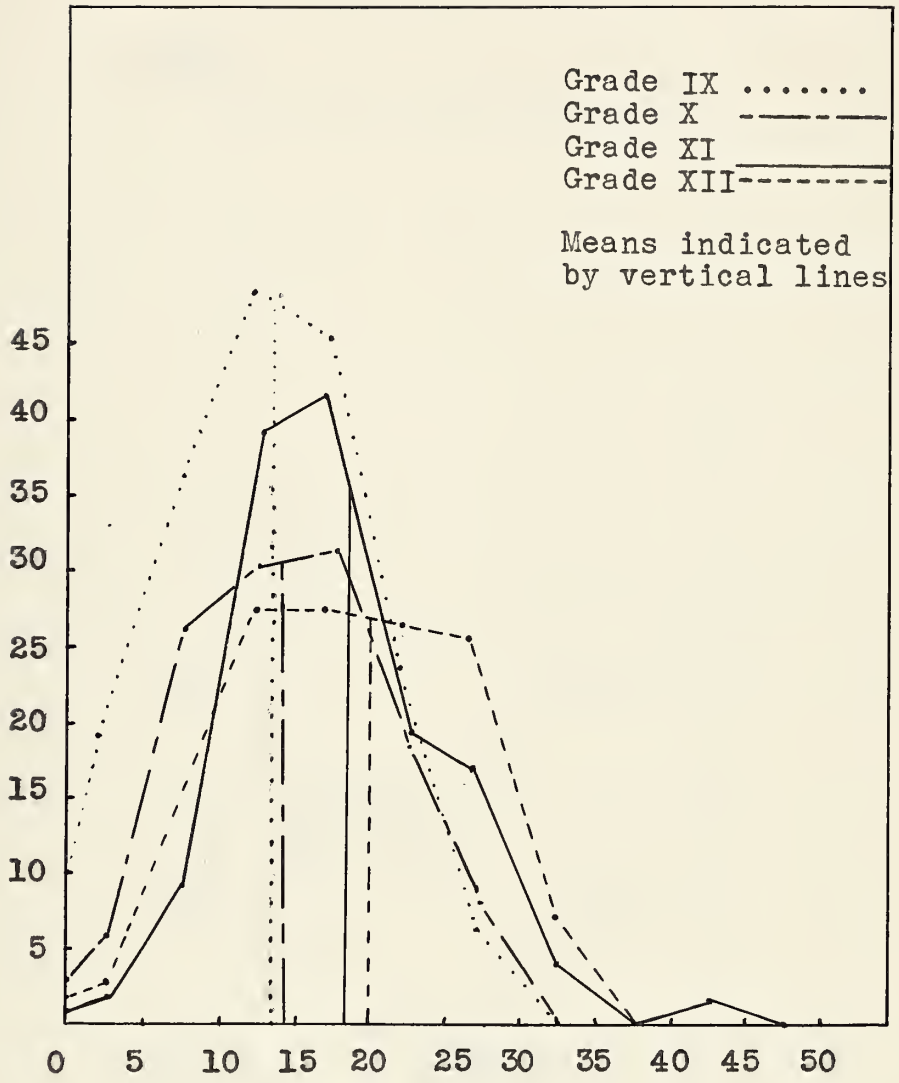

Figure 7.- Grammar Terms - Distribution of Scores in Grades IX - XII on Common Base.

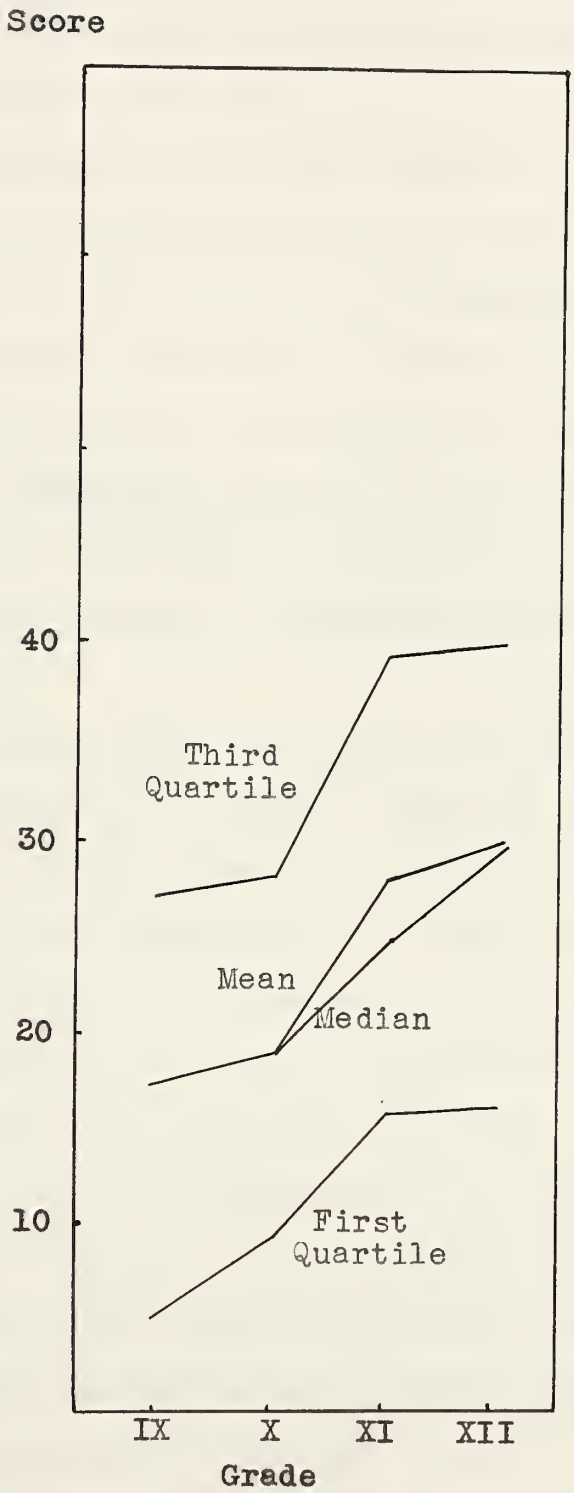

Figure 8.- Test of Grammar Terms - Mean and Quartiles.

The range of scores is from 0 to 44, the mean for the total group is 16.89, and the median 15.76. The grade means rise from 13.6 for Grade IX to 19.87 for Grade XII. The medians rise from 13.60 to 18.89, and paralell the means closely except in Grade XI.

As was the case for the Grammar Analysis Test, there is considerable overlapping from grade to grade. Computations from Table VI(b) show that 41.1% of the Grade IX scores exceed the mean for Grade X, 22.6% the mean for Grade XI, and 17.9% the mean for Grade XII. Also, 27.6% of the Grade XII scores fall below the mean for Grade IX, 31.2% below the mean for Grade X, and 50.3% below the mean for Grade XI. This overlapping is shown graphically in Figure 7, page 62.

The data of Table VI(a) have been represented graphically in Figures 5, 6, and 7. Figure 5 gives the frequency polygon of the scores for the four grades taken together, Figure 6 the frequency polygon for each grade separately, and Figure 7 the frequency polygons from Figure 6 presented on a common base line. The quartile points and means of Table VI(b) are presented graphically in Figure 8.

Like the frequency distributions for the Analysis Test, the frequency polygons for the Grammar Terms Test are all approximations to the normal probability curve. Each polygon is unimodal and has the mode approximately in the centre of the distribution, which tapers off to zero frequency at the upper limit in each case, but not at the

lower limit. The distributions in this case are not so satisfactory as for the Grammar Analysis Test. The Grammar Terms Test does not separate the students well according to their respective abilities.

The data relative to the skewness of these distributions are presented in Table VII.

TABLE VII

SKEWNESS OF DISTRIBUTION OF GRAMMAR TERMS

TEST SCORES FOR GRADES IX TO XII INCLUSIVE

Grade	Skewness	Standard Deviation of Skewness	Critical Ratio	Chances of a Significant Skewness*
IX	2.62	.805	3.38	100/100
X	.72	.845	.85	80/100
XI	.05	.80	.006	50/100
XII	.93	.89	1.15	87/100

* From Table 34, page 213 - H. E. Garrett-Statistics in Psychology and Education.

From Table VII it appears that the distribution for Grade IX is skewed definitely to the right, and that for the other grades, except perhaps for Grade XI, there is a very good chance that the scores for the populations from which these samples are chosen would also be so skewed. This indicates that probably for all grades the test is too difficult.

Examination of Table VI(b) reveals a number of interesting phenomena with regard to the Test of Grammar Terms. It is apparent that growth in the ability measured by this test is not so regular or consistent as is growth in the analytical ability. One striking feature is the disparity between mean and median at the Grade XI level. Another is that as measured by the upper quartile and mean, and to some extent by the lower quartile and median, practically all growth occurs from the Grade X to Grade XI level.

Summary

Enough data have been accumulated with regard to scores on the Test of Grammar Analysis - Form A that we may regard the means and medians as sufficiently well established to serve as Alberta norms for any testing program in which it might be advantageous to have a tool to measure proficiency in formal grammar. This test appears suitable for that purpose.

Form B, the alternate form of the Grammar Test, should not be so used without much further preliminary work. Only at the Grade XI level has it been administered to enough students to establish even tentative norms, and even there, because of the marked changes in the content of the high school English courses of recent years, the tentative norms are obsolete. Before this form of the test should be used in the high schools, it should be administered to a population of from one to two hundred students in each

grade from IX to XII, and the usual statistical constants computed.

However, Form B has been shown to be practically an equivalent of Form A, and has been of value, as the existence of the two forms has made it possible for us to compute the correlation of reliability for the test.

For general use in the high school the analysis test is no doubt better than the terms test. This is so for three reasons. In the first place, the distribution given by this test is closer to what might be expected under the law of normal probability than is the distribution for the Grammar Terms Test. Secondly, the Grammar Analysis Test indicates more consistent progress from grade to grade, as a comparison of Figures 4 and 8 will show. Thirdly, results from this test correlate more highly with results on other English tests. This is evidenced by the data set forth in Chapter VIII.

CHAPTER VIII

THE CORRELATION BETWEEN GRAMMAR SCORES AND SCORES ON OTHER ENGLISH TESTS

In an effort to discover whether there is any relationship between proficiency in formal grammar and proficiency in other fields of language ability, the scores on each of the five tests were correlated with the scores on each of the other tests. The Pearson product-moment method was used in computing the co-efficients of correlation. These co-efficients, together with their probable errors, and other data, are found in Table VIII. Where possible, these co-efficients were corrected for attenuation.

The co-efficient of correlation is a measure of concomitance of variation. If a number of subjects are measured with respect to two properties, e.g. two of weight, height, age, intelligence, mechanical ability, etc. and it is found that the standings or ranks of each individual on both tests are the same, there is perfect correspondence which will be indicated by a co-efficient of correlation of +1.00. If the ranks are reversed on the two tests, so that the individual who ranks the highest on one test is lowest on the other, and so on, the correlation will be -1.00. If there is absolutely no correspondence in scores, the correlation will be 0.00.

Usually the obtained co-efficient of correlation is not a true measure of the correspondence of scores on any two tests. The measure is attenuated by any lack of reliability in the tests themselves. Provided, however, that we know the co-efficients of reliability of the tests we are using, allowance may be made for this attenuation by means of Spearman's formula.

$$r_t = \frac{r_o}{\sqrt{r_1 \, r_2}}$$

where r_t is the co-efficient of correlation corrected for attenuation.

r_o is the obtained co-efficient of correlation.

r_1 is the co-efficient of reliability of the first test.

r_2 is the co-efficient of reliability of the second test.

Thus the corrected co-efficient gives the theoretical maximum which could be expected between two tests when each is perfectly reliable.

In interpreting the co-efficients in Table II, three precautions must be kept in mind. The first of these is that our interpretations are sound only to the extent that the tests are valid, i.e., that they measure what they purport to measure. As indicated in Chapter IV, the validity of some tests is well established; that of others is practically unknown.

The second precaution to be observed is in the interpretation of the co-efficients themselves. A high co-efficient of correlation indicates a close correspondence in scores on the two tests being correlated, but this does not necessarily mean a cause-and-effect relationship. The high correlation may be due to chance factors or to outside factors entirely.

Finally, it seems that there are a number of extraneous factors operating to produce a positive correlation between the scores on the different English tests. These factors would include ability to understand spoken or written directions, ability to write the required responses, motivation or desire to make as high a score as possible on the different tests. Each of these factors is common to all the tests in our battery. Segal and Barr (Chapter III) believe such factors would operate over a much wider field than studied in this investigation to produce a correlation of about 0.48, but in view of some of the comparatively low co-efficients in Table VIII this figure seems very high.

TABLE VIII

CORRELATIONS BETWEEN THE DIFFERENT ENGLISH TESTS

(Product-Moment Co-efficient of Correlation)

	Vocabulary	Carroll Prose Appreciation Junior	Carroll Prose Appreciation Senior	Grammar Terms	Grammar Analysis
Hudelson Composition	.56±.021 .59±.019	.22±.05 .31±.047	.21±.035 .24±.035	.26±.028 .29±.027	.41±.025 .45±.024
N (Number of Cases)	517	169	334	516	508
Vocabulary	(.89±.008)	.34±.044 .43±.041	.34±.033 .43±.031	.33-.026 .39±.025	.64±.014 .74±.013
N	297	183	325	531	532
Carroll Junior	.22±.05	(.70±.019)		.15±.05 .20±.05	.19±.05 .23±.05
N	169	(Not given)		175	167
Carroll Senior	.34±.033 .43±.031		(71±.016)	.10-.036 .13±.036	.22±.034 .29±.034
N	325		(Not given)	339	335
Grammar Terms	.33±.026 .39±.025	.15±.05 .20±.05	.10±.036 .13	(.79±.025)	.41±.023 .51±.021
N	531	175	339	100	550
Grammar Analysis	.64±.014 .74±.013	.19±.05 .23±.05	.22±.034 .29±.034	.41±.023 .51±.021	(.84±.038)
N	532	167	335	550	50

Figures in parentheses are from sources mentioned in Chapter II, and are indices of reliability.

Figures in red are co-efficients of correlation corrected for attentuation.

PROSE APPRECIATION

Some pertinent data taken from Table VIII are presented in Table VIII(a).

TABLE VIII(a)

CORRELATIONS BETWEEN SCORES ON PROSE APPRECIATION TEST AND SCORES ON GRAMMAR TESTS

	Carroll Prose Appreciation Senior	No. of Cases	Carroll Prose Appreciation Junior	No. of Cases
Grammar Analysis	.22±.034	353	.19±.05	167
Corrected for Attenuation	.29±.034		.23±.05	
Grammar Terms	.10±.036	339	.15±.05	175
Corrected for Attenuation	.13±.036		.20±.05	

Examination of Table VIII(a) indicates a number of interesting similarities. The uncorrected correlations between the scores on the analysis test and those on the two forms of the appreciation test are both very low and are almost equal in magnitude. The correlations between scores on the terminology test and on the appreciation tests are lower than for the corresponding analysis test co-efficients. Of the latter two, neither co-efficient is significant, as neither is at least four times as large as its probable error.

There are also some differences to be noted. Both uncorrected and corrected co-efficients between the analysis and senior appreciation tests are larger than the corresponding figures between the analysis test and the junior appreciation test. Moreover, although the uncorrected co-efficient between the analysis test and the senior appreciation test is small, it is statistically significant, while that between the analysis test and the junior appreciation test is not significant, as it is not at least four times its probable error.

Keeping in mind the precautions set forth at the beginning of this chapter, we may conclude that a knowledge of the terminology of formal grammar does not help in appreciation of literature either in Grade IX or in the grades above Grade IX. Analytical ability in grammar does not seem to affect very strongly power of literary appreciation in Grade IX, although it may do so in Grades X, XI, and XII. However, if we derive the co-efficients of correlation for each grade separately, the correlations between Grammar Analysis scores and Prose Appreciation scores are much less than the correlation for the three grades together. These co-efficients are presented in Table IX.

TABLE IX

CORRELATIONS BETWEEN SCORES ON PROSE APPRECIATION AND ON GRAMMAR ANALYSIS FOR GRADES IX, X, XI, and XII

	Grade							
	IX		X		XI		XII	
		No. of Cases		No. of Cases		No. of Cases		No. of Cases
Co-efficient of Correlation	.19±.05	167	.20±.06	101	.09±.06	117	.17±.06	108
Co-efficient Corrected for Attentuation	.23±.04		.26±.06		.13±.06		.22±.06	

Table IX indicates that for each grade except Grade XI there is a mild but positive and significant correlation between scores on the Grammar Analysis test and scores on Carroll Prose Appreciation test for the same grade. The figures for Grade XI, .09±.06 and .13±.06, are not in line with the others, and it is probable that chance factors working in so small a population made the population for this grade atypical.

Previous investigators seemed to believe that if there were any causal connection between powers of appreciation and ability in formal grammar, it would be revealed by a high co-efficient of correlation, but this view is unsound. Power of appreciation of literature is exceedingly complex, depending on many factors. Thus even if we knew absolutely definitely what each factor was, and were able to measure each factor accurately, we might find only a small correlation

between power of appreciation and each individual factor.

Probably one such factor is ability to read with comprehension, and possibly another is ability to write good English. Certainly in such lines as skilled trades the journeyman is better able to appreciate the craftmanship of another worker than is the amateur. For purposes of comparison, in Table VIII(b) below correlations between scores on the Carroll Appreciation Tests and scores on other English tests are presented.

TABLE VIII(b)

CORRELATIONS BETWEEN CARROLL PROSE APPRECIATION SCORES AND OTHER ENGLISH SCORES

Carroll Test Correlated with	Carroll Senior	No. of Cases	Carroll Junior	No.of Cases
Hudelson Composition	.21±.035	334	.22±.05	169
Vocabulary	.34±.033	325	.34±.044	183
Vocabulary Corrected for Attenuation	.43±.031		.43±.041	
Grammar Analysis	.22±.034	325	.19±.05	167
Analysis Corrected for Attenuation	.29±.034		.23±.05	

Thus we see that the scores measuring analytical grammar ability correlate with the scores measuring appreciation to about the same extent as do those of composition ability, but that reading comprehension ability, as measured by the vocabulary test, correlates much better than either of the others with appreciation scores. Ability to read with

comprehension is apparently a greater factor than analytical grammar ability in appreciation of English prose.

Co-efficients of correlation indicate a correspondence between two sets of measurements, but no matter how high, such co-efficients do not imply any causal relationship. It is especially true that when the correlations are low, from 0.0 to about 0.40, they may be due purely to the operation of chance factors. Therefore we cannot say that ability in formal grammar leads to power of literary appreciation. However, the fact that a correlation, mild though it may be, has been established between ability in formal grammar and power of appreciation would seem to indicate that those who claim there is no causal relationship are going further than the facts warrant.

ABILITY IN WRITTEN COMPOSITION

Here also we present relevant data from Table VIII.

TABLE VIII(c)

CORRELATIONS BETWEEN HUDELSON COMPOSITION SCORES AND OTHER ENGLISH SCORES

Hudelson Scores Correlated with	Co-efficient of Correlation	Co-efficient Corrected for Attenuation	No. of Cases
Grammar Analysis	.41±.025	.45±.024	508
Grammar Terms	.26±.028	.29±.027	516
Carroll Prose Junior	.22±.05	.31±.047	169
Carroll Prose Senior	.21±.035	.24±.035	334
Vocabulary Test	.56±.021	.59±.019	517

(In the above table the corrected co-efficients should in point of fact all be somewhat higher than indicated. As the author of the Hudelson English Composition Scale gives no hint as to the co-efficient of reliability of his test, we have had to assume that the reliability is perfect, and the co-efficient of reliability is +1.0. Almost certainly this is not the case, and the lower the reliability co-efficient, the higher would be the above co-efficients corrected for attenuation.)

Comparing Table VIII(c) with Table VIII(a) on page 72, we find that both the Grammar Analysis scores and the Grammar Terms scores correlate better with the Hudelson Composition scores than with either scores on the Junior or Senior Carroll Appreciation Test. We may also note that in each case the correlation with the Analysis test is better than with the Terms test.

The co-efficient of 0.45 between Hudelson Composition scores and Grammar Analysis scores appears to indicate a considerable degree of correlation. But if we compute the correlation for each grade separately, the correlations are much lower. These correlations appear in Table X.

TABLE X

CORRELATIONS BETWEEN SCORES IN COMPOSITION

AND IN GRAMMAR ANALYSIS FOR GRADE IX, X, XI, and XII

	Grade							
	IX	No. of Cases	X	No. of Cases	XI	No. of Cases	XII	No. of Cases
Co-efficient of Correlation	.24±.05	160	.27±.06	107	.15±.06	110	.06±.066	103
Co-efficient Corrected for Attenuation	.26±.05		.29±.06		.17±.066		.066±.063	

(For reasons indicated above, each of these corrected scores should be materially higher.)

The correlations for Grades IX and X are low but positive, and in view of the magnitude of their probable errors, are significant. Those for Grades XI and XII are positive, but as they are not at least four times their own probable errors, cannot be regarded as significant. Do these co-efficients mean that formal grammar is a help to composition ability in Grades IX and X but not in Grades XI and XII? This is not necessarily the case. It may be that in Grades IX and X much more attention is paid to grammar than in Grades XI and XII, with the result that in the lower grades the students actually have a better verbal knowledge of formal grammar, but in the last two years the non-functional facts of grammar are being forgotten; the functional facts incorporated into the students' writing habits.

In discussing the data pertinent to the Appreciation Test results, we mentioned the possibility that ability in writing might lead to better appreciation of written prose. It is equally possible that heightened sensitivity to good English prose might be reflected in better written prose composition. The ability to write good English and the power to appreciate good English probably affect each other reciprocally.

From Table VIII(c) we may note that the correlations between scores on the Hudelson Composition Scale and scores on the Vocabulary Test are positive and significant. We may note also that these correlations are greater than the correlations between Composition scores and either Appreciation scores or Grammar Terms scores, but are less than the correlations between Grammar Analysis scores and Composition scores. These facts might indicate that composition ability depends on the breadth of the student's vocabulary of recognition, but vocabulary of recognition is not so important in composition ability as is knowledge of formal grammar.

ABILITY IN READING WITH COMPREHENSION

The correlations of scores on the Vocabulary Test with scores on the other English tests are presented in Table VIII(d).

TABLE VIII(d)

CORRELATIONS BETWEEN VOCABULARY TEST

SCORES AND OTHER ENGLISH SCORES

Vocabulary Scores Correlated with	Co-efficient of Correlation	Co-efficient Corrected for Attenuation	No.of Cases
Grammar Analysis	.64±.014	.72±.013	532
Grammar Terms	.33±.026	.39±.025	531
Carroll Prose Appreciation Senior	.34±.033	.43±.031	325
Carroll Prose Appreciation Junior	.34±.044	.43±.041	183
Hudelson Composition	.56±.021	.59±.091	517

The correlations between the scores on the Vocabulary Test and the scores on the other four tests are on the average higher than the correlation between any other one test and the remaining four. But from the nature of the Vocabulary Test we should assume that word comprehension ability, or breadth of reading vocabulary, assists in obtaining high scores on the other tests, rather than the reverse.

It would have been better to test reading ability by means of a test of paragraph comprehension rather than of word comprehension. Had that been done, a high correlation between scores on the paragraph comprehension test and, say, the grammar comprehension test might have provided grounds for assuming that ability in formal grammar helps toward

comprehension of written English. But it seems more logical to assume that the index of 0.64 between vocabulary and grammar scores means that the proficiency in the former helps the latter rather than the reverse. The Vocabulary Test was chosen to test reading ability because its scores gave a very high co-efficient when correlated with scores on a paragraph meaning test. It therefore appeared to be a valid reading test.

The moderate correlation between the Vocabulary Test and the Grammar Terms test might be expected. The former is a test of general reading vocabulary; the latter of a specific part of one's reading vocabulary.

SUMMARY

The power of expressing oneself fluently, forcefully, clearly, and aesthetically through the medium of spoken or written language is an exceedingly complex ability. It depends partly, in written language, on such relatively simple things as mastery of rules of punctuation and capitalization. It depends also on the possession of a wide vocabulary, and on a knowledge of sentence and paragraph structure. It includes powers of discrimination, sense of form, realization of what is relevant and what is irrelevant to the purpose in the mind of the writer. It involves clear and logical thinking, and the ability to recognize fallacies in the writer's own thinking.

Composition ability is all this and much more.

Power of literary appreciation is perhaps equally complex, involving many or all of the factors which make up composition ability. It requires a good reading vocabulary and includes ability to recognize different shades of meaning, discernment enough to recognize the purpose of the writer, sufficient insight to discover not only what the author says but what he means. It demands adequate keenness of intellect to judge whether the author is justified in saying what he does say.

These two things, ability in written composition and power of literary appreciation, are made up of many simpler abilities, among which we may include ability to perceive grammatical relationships. To expect a high degree of correlation between scores on composition tests or appreciation tests and scores on grammar tests of the type used in this investigation is to expect too much. As long as there is a positive, statistically reliable coefficient of correlation, even though small, we are justified in assuming that there is a definite relationship between the abilities which the tests measure, until the absence of such relationship has been proven.

From the nature of the statistical data presented in this chapter, it would appear that a definite relationship between ability to perceive grammatical relationships, on one hand, and ability in written prose composition or in

prose appreciation, on the other hand, has been shown to exist in some high school grade levels at least, and may exist at the other grade levels. Because of the nature of the reading test, a similar inference cannot be made with respect to formal grammar ability and reading comprehension ability.

The co-efficients of correlation between the scores on the grammar terminology test and scores on the other tests were all quite small, smaller than the corresponding correlations between scores on the grammar analysis test and scores on the other tests. Accordingly it would seem that a study of formal grammar does not provide the student with a terminology indispensable for composition ability or literary appreciation. The highest co-efficient of correlation between scores on this test and any other test, $0.41 \pm .023$, was with the grammar analysis test. This is not surprising in that both were intended to measure different aspects of formal grammar ability. But the grammar analysis test correlated equally highly ($0.41 \pm .025$) with the composition test, and more highly ($0.64 \pm .014$) with the vocabulary test. Thus it does not appear as if the terminology of formal grammar is indispensable even to ability to perceive syntactical relationships in grammar.

CHAPTER IX

SUGGESTIONS TOWARDS MORE FUNCTIONAL GRAMMAR

Though from the preceding chapters it would appear that one may learn formal grammar without ever having it affect one's use, comprehension, or appreciation of the language, this is not necessarily so. If grammar is taught with the idea in mind of immediate use of the grammatical facts so taught, it seems reasonable to suppose that grammar might function in use. Accordingly, from his own experience and from the reports of others, this writer would like to suggest the following means of making grammar a functional subject in the classroom.

I Less Emphasis on Terminology

As scores on the grammar terms test correlated very poorly with scores on any of the other tests, excepting the grammar analysis test, the terminology of grammar seems by no means indispensable to a knowledge of correct English. As indicated in a previous chapter, a knowledge of some of the technical grammatical terms does help in teaching students how to write better. These terms are the more common ones such as: 'singular', 'plural', names of the parts of speech, of the tenses and cases, of the moods, and other terms equally common, or nearly so.

Many of the terms taught in the orthodox grammar books, however, seem to be included merely for logical completeness. These comprise terms such as: 'cognate object', 'appositive adjective', sub-classifications of adjectives and adverbs (but not of pronouns.) All such useless material should be omitted.

How can we decide what technical terms to teach the secondary student, what to omit? The answer to this question can be found in the old precept, "Teach when the need arises." When a child needs to know a grammatical term in order that he may write or understand better, then he should learn it. If he never has any use for it, it may be safely omitted.

II Less Emphasis on Latin Grammar

(a) Syntax

> "All languages were indiscriminately saddled with the elaborate Latin system of tenses and moods in the verbs and by means of such Procrustean methods the actual facts of many languages were distorted and misrepresented ---- The mischief consequent on this unfortunate method of measuring all grammar after the pattern of Latin grammar has not even yet completely disappeared ----" (Jesperson - Language, page 23.)

In any orthodox grammar text the influence of the Latin grammar may be found. For instance, when a noun is used as direct or indirect object of a verb or after a preposition, the reader is gravely informed that such a noun is in the objective case, although for centuries we who speak English have used the same word in what the textbook writer calls the nominative case. Yet many topics that

should be included in an English grammar are omitted. because they were unimportant or non-existent in Latin. Jesperson, in his "Essentials of English Grammar", gives considerable attention to word order in English. But most writers omit all reference to word order, because it so little affected the meaning of a Latin sentence.

There are many other topics which Jesperson deals with in his "Essentials of English Grammar", but which most high school grammars omit or treat very briefly. Some of these are sound laws (Chapters II - V inclusive), collective nouns and their agreement with their verbs (pages 210 - 212), permissible use of unattached or "dangling" participles, (page 95), restrictions in the use of the genitive (pages 142 - 143). It is noteworthy that the special problems which Jesperson deals with in these sections, but to which most text-book writers pay scant or no attention, are problems in English grammar, but not in Latin grammar as traditionally taught to English-speaking students.

In Latin the subjunctive is a very important mood, but not so in English. Mencken, in his American Language, page 427, says of the common vernacular, "The subjunctive be, of course, is extinct," and Stephen Leacock (Too Much College, page 97) adds "---in English we have almost lost the subjunctive." Stormzand and O'Shea (18) found in an analysis of all sorts of written material that the indicative mood is used 98% of the time, the imperative 1.3%, the subjunctive .7%. Yet in the orthodox grammar text, such as the High School Ontario

Grammar used until quite recently in Alberta, more pages are devoted to the subjunctive mood than to the indicative. Classical tradition has a greater influence than present need.

(b) Inflections

Many grammar texts devote considerable space to irregular plural and feminine forms of nouns. Many of the English words that came from Latin, Greek, or other languages retain in English their original plural forms, and these plurals are laboriously drilled into the minds of high school students. However, many of these words are quite uncommon in English in either their singular or plural form, or in both. Some of these words are listed below with the rating given them in the most recent edition of Thorndike's Word Book.(19) If a word is one of the most common thousand in the English language, it has a rating of 1; if it is one of the second most common thousand, its rating is 2, and so on. Words in the most common five thousand are further classified as 1a or 1b, 2a or 2b, etc.,depending on whether they belong to the more or the less common five hundred of the thousand in which they are found.

The words in the list below are divided according to the way in which they form their plurals, and in each division are listed from most common to least common. The figure under "M" indicates Thorndike's rating for each word.

If no figure is given, the word is so uncommon as not to appear at all in Thorndike's list of the twenty thousand most common English words.

The writer does not pretend that this list is exhaustive, as only a few of the technical terms from such fields as mathematics and the biological sciences are included, but most of the non-technical words in English will be found herein.

SOME ENGLISH NOUNS WITH IRREGULAR PLURALS

Singular	M	Plural	M
I Singulars in - us, plurals in - i.			
nucleus	7	nuclei	-
fungus	8	fungi	14
radius	8	radii	20
stimulus	8	stimuli	-
bacillus	10	bacilli	-
terminus	17	termini	-
gladiolus	18	gladioli	-
alumnus	-	alumni	13
locus	-	loci	-
II Singular in - um, plurals in - a.			
medium	4(b)	media	-
gymnasium	6	gymnasia	-
minimum	8	minima	-
maximum	9	maxima	-
forum	10	fora	-
serum	11	sera	-

II (Cont'd.)

Singular	M	Plural	M
referendum	11	referenda	-
spectrum	12	spectra	-
stratum	13	strata	13
memorandum	13	memoranda	-
auditorium	13	auditoria	-
fulcrum	13	fulcra	-
datum	14	data	10
millenium	15	millenia	-
ovum	15	ova	-
sanitorium	15	sanitoria	-
momentum	15	momenta	-
stadium	16	stadia	-
desideratum	17	desiderata	-
symposium	18	symposia	-
eulogium	19	eulogia	-
atrium	20	atria	-
bacterium	-	bacteria	7
caecum	-	caeca	-

	Singular	M	Plural	M
III Singular in - a, plural in - ae.				
	larva	7	larvae	-
	formula	8	formulae	-
	pupa	8	pupae	-
	antenna	13	antennae	14
	vertebra	14	vertebrae	-
	nebula	16	nebulae	-
	caesura	19	caesurae	-
	alga	-	algae	10
	minutia	-	minutiae	20
	alumna	-	alumnae	-
	stria	-	striae	-
	stela	-	stelae	-
IV Singular in - a, plural in - ata.				
	stigma	8	stigmata	-
	stoma	17	stomata	-
V Singular in - on, plural in - a.				
	phenomenon	7	phenomena	16
	criterion	15	criteria	-
	spermatozoon	*	spermatozoa	*

* (20 for both combined.)

VI Singular in - ex, plural in - ices.				
	index	6	indices	-
	appendix	8	appendices	-
	apex	12	apices	-
	vertex	17	vertices	-
	codex	18	codices	-

	Singular	M	Plural	M
VII Plural in - im.				
	cherub	7	cherubim	7
	seraph	10	seraphim	12

Two points may be noted concerning the nouns in the above list.

1. Very few nouns have both singular and plural forms included in Thorndike's most common 10,000 words.

2. The singular or the plural of most nouns is so uncommon as not to be included at all in Thorndike's most common 20,000 words in English.

In addition to the above words, there are others of foreign derivation such as basis, thesis, axis, analysis, symthesis, parenthesis, synopsis, chrysalis, that form their plurals otherwise than by adding 's' or 'es'. On the grounds of euphony it is probably wise to retain the classical plurals for such words, and the same thing might be true for those included in (VI) above. But where no valid reason other than tradition is to be found for retaining the original plural forms, it would probably be better fully to naturalize these once-exotic words, and teach only the English form for their plurals. To allow the student to follow the principles that govern the inflection of most English nouns will release valuable time for other aspects of language study. Concerning the teaching of such irregular forms as those which appear above, H. N. Rivlin

says on page 83 of his study,"Many of the words referred to in such lists as 'Masculine and Feminine Forms', 'The Most Common Nouns with Irregular Plurals', and 'The Most Common Irregular Verbs', are selected by the author, with apparently little attention paid to the frequency with which these words appear in speech or writing."

One objection to teaching English inflections for such words as appear in the above list might be that the student will need to know the classical forms when he comes to study mathematics or biology where such words are used extensively. However, it would seem that the teaching of spelling, technical meaning, and inflection of such nouns as radius, locus, vertex, index should properly be included in the mathematics course where they will be frequently used. Similarly words such as pupa, larva, stoma, nucleus, ovum should be taught in the biology course. They should not be the concern of the grammar teacher.

Another objection to using English inflections of such words might be that the high school student will use the classical forms in his own writing. For most irregular plurals and feminines the English forms would serve the student equally as well as the classical. Moreover, high school students and even most adults have very small writing vocabularies, and seldom feel the need of using words as uncommon as most of these irregular forms.

The following table gives the percentage of words from Thorndike's most common 500, 1000, 1500, and 2000 words as used by students in Grades IX to XII inclusive. The data for high school students are taken from a previous study by this writer (20), and for university students from a study by Witty and Fry (21).

STUDENTS' AVERAGE WRITING VOCABULARY

Grade Level	Percentage of Words Used from: Most Common 500 Words	Most Common 1000 Words	Most Common 1500 Words	Most Common 2000 Words
IX	78.10	85.15	88.42	90.33
X	79.00	86.50	90.59	92.56
XI	77.22	85.44	89.90	92.12
XII	76.12	83.89	89.45	90.51
University Freshmen		85.25		90.92
University Sophomores		84.50		90.78
University Seniors		84.30		90.11

Finally, it might be argued that even if the student does not actually use such irregular forms himself, he needs to know them that he may understand them when he recognizes them in his own reading. However, knowledge of the regular forms (singular, masculine, etc.) and understanding of the context will usually be sufficient to acquaint the reader with the meaning of the irregular forms.

If irregular forms are taught to increase the student's reading vocabulary, the effort might better be directed to teaching him more common words.

In the table below appear two estimates of the average high school student's reading vocabulary. The figures in the first column are taken from the study by this writer which has been mentioned above. The figures in the second column are from a study by G. C. Brandenburg (22).

AVERAGE READING VOCABULARY OF HIGH SCHOOL STUDENTS

Grade	No. of Words (1)	No. of Words (2)
IX	12,364	13,504
X	13,630	15,340
XI	14,630	13,974
XII	15,510	14,975

If we wish to broaden the reading vocabulary of our high school students, there are probably many words rated in Thorndike's word book from 13 or 15 to 20 which we may teach the students without going beyond the scope of the book altogether.

(c) Viewpoint

Not only has the heritage of Latin grammar influenced the content of our grammar books to their detriment, but it has also had a pernicious effect on our whole attitude towards the subject of grammar. Jesperson (Language, page 24 et seq.) shows that during the Middle Ages and after, grammar

was taught for the strictly utilitarian purpose of enabling scholars to write Latin that would be understood by other educated men. Gradually it became a set of rules to be followed, became prescriptive rather than descriptive as the grammar of a language should be. This prescriptive attitude was carried over to the vernacular when the latter became the language of learning. Thus, although the English language gradually changed throughout the years, the grammar as taught in schools did not, until eventually a not-inconsiderable breach appeared between the two. This breach leads Mencken (The American Language, page 417) to say, "At great pains (she) teaches her pupils the rules of what she conceives to be correct English, but the moment they get beyond the reach of her constabulary ear they revert to the looser and more natural speech-habits of home and work-place." Mencken accordingly sketches what he believes to be the outlines of the grammar of American vulgate, not what such grammar should be, but what he conceives it is. We find the same insistence on the descriptive nature of grammar stated by J. Paul Leonard (23) in these words, "Grammar is not final and static, but is an organized description of the actual speech habits of educated men. In other words, the laws of grammar are phrased in the indicative and not in the imperative mood." This conception of grammar, which is essentially that of Richards, has been discussed in Chapter III.

In short, the grammar we teach in the classroom should

be English and not Latin; and should be contemporary and not archaic.

III Grammar Should Prevent Errors in English Usage

Much of the material in our text-books deals with constructions rarely encountered, as, for instance, the material on the subjunctive mood, and does not help the student to avoid erroneous constructions. Some of this material leads to avoidance rather than use. Stormzand and O'Shea found in many cases that stress on difficult points, such as the formation of the possessive of noun phrases, led the students to avoid such constructions and use circumlocutions instead. Surely this is the reverse of functional grammar.

Stormzand and O'Shea analyzed a large body of written English to determine, first, what are the relative frequencies of the different types of grammatical constructions actually used and second, what are the relative frequencies of the different types of errors made in their use. The material they analyzed included English exercises from the fourth grade level to the level of senior university classes, business and women's social letters, "letters to the editor," newspaper editorials, feature columns, and news stories, and works of a few contemporary or recent writers, notably Macaulay, Stevenson, and Harold Bell Wright. On the basis of their study they arrive at the principles of grammar

curriculum construction which appear below. Because of the care and scope of their investigation, their conclusions are here set out at some length.

I Much of the traditional course in grammar may be safely omitted as two scientific criteria, Frequency of Usage and Frequency of Error, show that much traditionally taught in grammar is very rarely used.

II The basis of Frequency of Usage must be the fundamental method of determining the content of an English grammar course.

(a) This method is more complete than that of Frequency of Error, the only other scientific method that has ever been applied.

(b) Frequency of Usage method must precede an analysis of errors commonly made. Frequency of Error method may supplement Frequency of Usage method but cannot displace it. An error which occurs five times in five chances is much more important than one which occurs ten times in one hundred chances. The latter is probably not an error of ignorance as the former is, but a matter of carelessness.

III However, Frequency of Usage alone is not a sufficient guide to tell us what grammar we should teach. There are a large number of grammatical phenomena which occur very frequently but which seem to offer no opportunity for error and these, of course, need little teaching.

IV On the basis of the two complementary principles of Usage and of Error, the topics which must be emphasized and which may be eliminated are now summarized.

1. The Sentence, Its Form and Structure

(a) The distinction between simple and compound sentences is fundamental in importance.

(b) The classification of sentences as declarative, interrogative, imperative, and exclamatory is much less important.

2. Clauses

(a) The three types of clauses - adverbial, adjectival, and substantive - are practically of equal importance but drill on classification exercises seems unwarranted.

(b) Distinction between limiting and non-limiting adjectival clauses should be emphasized for the sake of clearness.

(c) "The entire sections on the uses or constructions of substantive clauses and on the distinction of adverbial clauses as to meaning might be eliminated."

3. Prepositional Phrases

These should receive attention, but error studies show that the difficulty is not grammatical in nature.

4. The Non-Modal Verb Forms

(a) "The infinitives, participles, and gerunds, are all quite important so far as frequency of use is concerned. Error studies emphasize this importance."

(b) The material presented in this connection, however, is of little value and should be re-organized, but material on topics such as split infinitives, the genitive case used with the gerund, and distinctions between past participles and past tense forms should be included.

5. Parts of Speech

The relative percentage of each part of speech should determine the relative importance of each in the grammar course. Frequency tables have been prepared from which we may obtain these relative frequencies.

6. **Nouns**

(a) Declension should be simplified.

(b) The genitive case demands much more emphasis than it formerly received.

(c) "Along with the simplification of declension should go simplification of the case constructions of nouns."

(d) "Frequency of use also indicates that a different interpretation should be put on the genitive case. Its use to express connection far exceeds its use to express possession. The change in nomenclature from 'possessive case' to 'genitive case' is fully warranted."

As far as classification of nouns goes, the only important distinction is that between common and proper nouns.

7. Pronouns

(a) The importance attached to the declension of pronouns is fully justified both on the grounds of usage and of error.

(b) Much attention needs to be devoted to the agreement of pronouns and their antecedents, especially personal and relative pronouns.

(c) Classification of pronouns should be limited to those which relate to case forms and constructions rather than class distinctions.

8. Adjectives

(a) Error studies show that the topic of proper adjectives must be emphasized for the sake of capitalization.

(b) "In the matter of comparison of irregular adjectives, frequency of usage warrants considerable emphasis, and frequency of error demands it."

(c) "The classification of pronominal adjectives serves no useful purpose."

(d) Articles offer such a small field for error that they merit little attention.

(e) Numerals should not be given more than slight attention.

9. Adverbs

"Adverbs constitute the minor part of the total vocabulary and present little occasion for error."

10. Conjunctions

These should be treated in connection with their functional uses with compound and complex sentences.

11. Verbs

(a) Because of conjugational complexities, much time and attention must be devoted to verbs.

(b) Only about three out of every 200 sentences use the subjunctive mood. The few verb forms commonly used should be studied without memorization or drill on the whole paradigm of this mood.

(c) "Another matter often overdone is the uses of 'shall' and 'will', non-future. Popular usage seems determined to over-rule the grammatical niceties here, and, after all, judging by infrequency of usage, there is little occasion for the quarrel."

(d) Present and past tense forms should receive the largest part of attention.

V Estensive eliminations of technical grammar are advisable but the retention of a number of topics is equally necessary.

VI Stormzand and O'Shea in another part of the book have outlined the various remaining essential topics.

VII "Previous studies in the matter of errors will have to be revised by some system of weighting."

VIII "Different standards of content can and should be determined for different levels of school work. ---------- Scientific principles of language mastery can be deduced from psychological principles of language usage, supplemented by considerations of errors, their frequency, persistence and social seriousness. All of these factors can be quantitatively determined."

The objective of preventing mistakes is most commendable, and the ideas of these writers on the whole quite sensible, but Rivlin points out the danger in allowing such error counts to determine the entire content of a grammar course.

He mentions several weaknesses of these counts.

1. They are notoriously loose, inaccurate, and unreliable.
2. Many 'common' errors are not really errors at all, but quite acceptable.
3. A course of study based on error counts does not contribute to sentence mastery.
4. "We must anticipate future errors which would come as a result of the lack of instruction on vital points in English."

Rivlin further criticizes Stormzand and O'Shea in that their findings are based on the works of writers who have studied and presumably been influenced by formal and traditional grammar. Furthermore, Rivlin claims that their standard of adult usage is too low an objective. If newspaper English reaches this "standard of adult usage", this writer agrees emphatically with Rivlin. Nor is the quasi-technical phraseology of many business letters a standard with which English teachers should be content.

In the main, Rivlin's criticisms seem well taken. A study of errors habitually made in writing would seem to have a place in determining the content of a grammar course, but such a study should be made carefully and cautiously.

The fundamental fallacy of assuming that principles of formal grammar can be discovered through an examination of popular or accepted usage has been discussed in Chapter III.

At best, usage counts can but give us rules which are the applications of grammar principles. Such rules depend not only on the principles of grammar, but also on the peculiar needs of the writer, and the writer's whole environment, such as the social period in which he is writing, and the type of reader for whom he is writing.

IV Remedial Uses of Grammar

This writer has found in the classroom that a knowledge of formal grammar on the part of high school students enables them readily to understand the reasons why many of their errors in English composition are errors. This remedial value of formal grammar, empirically found by this writer, is also discussed in Rivlin's study. Part of this study consisted of a survey of the incidental references to formal grammar in the English classes of a large New York high school for boys. The survey was carried on for a period of one month. The school in which the survey was made had an enrolment of 4,504 boys, most of whom were preparing for entrance to college or professional schools, and almost all of whom had had at least three years of formal grammar instruction.

"The extensiveness of the investigation can be judged from the following summary:

Total number of classes reporting ----------	52
Total number of class periods reported ---------	530

Total number of periods in which grammar was

not referred to ---------- 210

Number of periods devoted to teaching the grammar

or to correcting 'common errors' listed in

the school syllabus ---------- 28

(These references to grammar are not included in

the tabulation.)

Number of periods in which grammar was referred to

in the course of the class work ---------- 292

Total number of references to grammar ---------- 431."

A record of the particular grammar facts referred to in these classes was also kept. On the basis of this record, Rivlin reached the following conclusions:

"In 530 periods of English work in a public high school, with approximately half the time devoted to literature, there was not a single period during which the teacher found it necessary to use grammatical nomenclature or procedure in order to make the author's meaning clear.

"Grammar is used incidentally in approximately half of the high school English class meetings.

"The chief characteristics of the grammar actually used in the classroom are simplicity and restricted range.

"No instance was found where non-functional grammar was used incidentally in the high school English class.

"The majority of most frequently used items of incidental grammar are references to a few grammatical principles which are actually included as part of the elementary study of grammar; for example, 'agreement of verb and subject - 26 references', and 'use of wrong tense - 20 references."

V Less Emphasis on Analysis and Parsing

Our study has shown that there is a positive and significant correlation between ability to perceive grammatical relationships and ability to write good English prose. Accordingly, we may conclude that exercises in sentence analysis and parsing should still constitute an important part of the grammar course we teach our students. However, the emphasis that has been traditionally given to these phases of the subject has probably been much too great. The sentences our students analyze should be of the type they themselves read and write. At times it seems as if the grammar book authors have searched the field of English literature to find the most exceptional, least common constructions possible. Perhaps the ideal grammar text would be one with no exercises in analyzing and parsing included at all, but one in which the student would be directed to take from his own written assignments or his own texts in literature, social studies, science, and other subjects ordinary sentences for him to work on. The regular and not the irregular construction should be stressed.

VI More Emphasis on Grammar in Use

If grammar is to be functional, the student must use synthetically the grammatical facts which he learns analytically. When a boy or girl writes a composition

assignment, or indeed an assignment in almost any field, he will usually apply a certain number of grammatical principles, but he will not necessarily apply those which his teacher wishes him to. Stormzand and O'Shea accordingly suggest that the grammar student be given exercises in rewriting. They should be assigned certain selections to condense or amplify, such selections as will require the use of those grammatical constructions which the instructor is teaching. In this way, then, will the student use in his own writing the grammar as taught by his teachers, the grammar which is actually a description of the language actually spoken and written by educated men and women.

In his book "Interpretation in Teaching", I. A. Richards suggests a large number of such exercises which he has used with adult and university students. However, he did not confine his students to condensing or amplifying another person's ideas. The students were encouraged to write 'protocols' aesthetically pleasing, grammatically good, and logically sound. Some of Richards' exercises, taken from Chapter XI (Basic English) in his book on interpretation are as follows.

"Easy

I After a clear comparison in your mind between:
(a) The destruction of the town took three minutes.
(c) The destruction caused by the attack might still be noted after twenty years.
make up parallel sentences using the words: invention, building, change, answer, question.

Moderately Easy

II We might equally well say, with the same sense:
(a) 'The water is boiling in the kettle.'
(b) 'The kettle is boiling.'
Is this because boiling or because kettle has different senses in the two statements? What is the change if any? Make up other statements in which a word has the same trick of changing its sense, such as 'Those were happy days.' 'The boys have 5 hours of English a week.' Are these tricks in all ways the same?

More Difficult

III A. I went on foot to the foot of the mountains.
B. Come with a bright face and in your brightest colours.
C. This is one of the amusements from which I get no amusement.
The above are examples of different forms of expansions of the uses of words. Which of the following would you put with A, B and C as having in them parallel or nearly parallel expansions?
1. These tinned fruits are in glasses.
2. The machine worker becomes himself a machine.
3. If we are going for this sail, up with the sails!
4. The thunder of the guns was louder than thunder.
5. His looks were blacker than the night.
6. He gave the suggestion no support.
7. He gave us a stiff answer.
8. The payment made a serious hole in my pocketbook.

Similar exercises, taken from the appendix - (Some Suggestions Towards Classroom Exercises) of Richards' book are:

"Please frame parallel sentences to the following, indicating whether your parallel supports, or does not support, the argument that the author in your view intended to urge.

2. The teaching of a foreign language can as little replace the teaching of the mother tongue as a finger can replace the use of the hand.

3. Meaning is an arrow which reaches its mark when least encumbered with feathers."

Richards' book on interpretation is divided into three parts, Grammar, Rhetoric, and Logic. The author is not more concerned with any one of the trivium than with the other two. The principles of all three are very important in good writing, and English prose cannot be good with respect to one if it is bad with respect to either or both of the other two.

Richards' exercises quoted above are probably too difficult for high school students, but there is no reason why similar exercises, adapted to the adolescents' more limited experiences, should not prove valuable in leading the student to write clear, concise, forceful, meaningful and pleasing English prose.

SUMMARY

In this chapter we have tried to point out ways in which grammar may be made a more valuable tool in teaching high school students to write good English prose. The methods by which this may be done are now briefly summarized.

I Teach only such technical terms as the student actually needs and uses.

II The grammar we teach should be the grammar of the English tongue.

(a) Syntactical constructions not actually used in English should be omitted, but those peculiar to English which the student needs should be included.

(b) English inflections should be taught unless there is good reason to the contrary.

(c) The rules of grammar should be considered as descriptive rather than prescriptive.

III A knowledge of grammar should help to prevent errors in English. Stormzand and O'Shea have made a careful tabulation of common grammatical errors, and we can organize our teaching to lead to the avoidance of such errors.

IV Grammar can be used as a tool for the correction of errors in English and prevention of repetition of such errors.

V Probably less emphasis than formerly was given to parsing and sentence analysis is necessary, and the material for exercises in parsing and grammar might be taken from the student's own written assignments or his own texts in English, literature, and other subjects.

VI More emphasis should be given to having students actually use grammatical constructions and apply grammatical principles in their own written assignments. Such assignments should be exercises not only in grammar but also in rhetoric and clear thinking.

REFERENCES

(17) Otto Jespersen: Language - Its Nature, Development, and Origin.

(18) Stormzand and O'Shea: How Much English Grammar?

(19) E. L. Thorndike: Teacher's Word Book of 20,000 Words.

(20) J. W. Chalmers: The Vocabularies of High School Students - A. T. A. Magazine, June 1935.

(21) Witty and Fry: Vocabulary Content of Compositions Written by College Students - Journal of Educational Research, Vol. 19, pages 135 - 138.

(22) G. C. Brandenburg: Psychological Aspects of Language- Journal of Educational Psychology, Vol. 9, pages 313 - 332.

(23) J. Paul Leonard: Functional Grammar - What and Where? English Journal, Vol. XII, No. 9.

(24) H. L. Mencken: The American Language - 4th edition.

BIBLIOGRAPHY

(1) L. W. Rapeer: The Problem of Formal Grammar in Elementary Education -- Journal of Educational Psychology, Vol. IV, page 125.

(2) H. N. Rivlin: Functional Grammar.

(3) Wm. Boyd: The History of Western Education.

(4) Henry Sweet: A Short Historical English Grammar.

(5) Ben Jonson: The English Grammar.

(6) Otto Jespersen: Essentials of English Grammar.

(7) I. A. Richards: Interpretation in Teaching.

(8) Richards and Ogden: The Meaning of Meaning.

(9) Franklyn S. Hoyt: The Place of Grammar in the Elementary School Curriculum -- Teachers' College Record, Nov. 1906.

(10) Louis W. Rapeer: The Problem of Formal Grammar in Elementary Education -- Journal of Educational Psychology, Mar. 1913 -- Vol. IV, No. 3.

(11) Segal and Barr: Relation of Achievement in Formal Grammar to Achievement in Applied Grammar -- Journal of Educational Research, Dec. 1926, Vol. XII, No. 5.

(12) Ellen Frogner: Problems in Sentence Structure in Pupils' Themes -- English Journal, Vol. XXII, No. 9.

(13) H. A. Carroll: A Standardized Text of Prose Appreciation for Senior High School Pupils -- Journal of Educational Psychology, Vol. XXIII, page 401.

(14) H. A. Carroll: A Standardized Text of Prose Appreciation for Junior High School Pupils -- Journal of Educational Psychology, Vol. XXIII, page 604.

(15) : 1931 Census of Canada.

(16) J. W. Chalmers: Factors Affecting the Command of English -- A. T. A. Magazine, Dec. 1935.

(17) Otto Jespersen: Language -- Its Nature, Development, and Origin.

(18) Stormzand and O'Shea: How Much English Grammar?

(19) E. L. Thorndike: Teachers' Word Book of 20,000 Words.

(20) J. W. Chalmers: The Vocabularies of High School Students -- A. T. A. Magazine, June, 1935.

(21) Witty and Fry: Vocabulary Content of Compositions Written by College Students -- Journal of Educational Research, Vol. XIX, page 135.

(22) G. C. Brandenburg: Psychological Aspects of Language -- Journal of Educational Psychology, Vol. IX, page 313.

(23) J. Paul Leonard: Functional Grammar -- What and Where? -- English Journal, Vol. XII, No. 9.

(24) H. L. Mencken: The American Language -- 4th edition.

APPENDIX

SOME ENGLISH TESTS USED IN THIS STUDY

Test of Grammar Terms

■ ■ ■ ■

NAME .....

SCHOOL ..... GRADE .....

■ ■ ■ ■

DIRECTIONS: This test is designed to measure your understanding of the terms used in the study of grammar. It consists of fifty statements, some of which are true, others false. For each true statement, place a T in the space provided in the left hand margin. For each false statement, place an F. As you will have only five minutes for this test, you must work quickly but accurately. Therefore, do **not** guess.

If a statement seems to you partly true and partly false, mark it as though it is false.

The following is an example of the type of statement of which this test is composed.

_F_ 1. Nouns are the same as pronouns.

■ ■ ■ ■

DO NOT TURN OVER THIS SHEET UNTIL INSTRUCTED

_____1. A noun is the name of something.

_____2. A verb is a part of speech.

_____3. A preposition is a conjunction.

_____4. A sentence expresses a complete thought.

_____5. Singular implies or means more than one.

_____6. Nouns are classified as proper and improper.

_____7. A proper noun is the name of a person, place, or thing.

_____8. Conjunction is the same as conjugation.

_____9. Adjectives sometimes modify pronouns.

_____10. Relative pronouns ask questions.

_____11. A clause contains a subject and a predicate.

_____12. The predicate of a sentence contains the verb.

_____13. Compound verbs are always found in compound sentences.

_____14. A complex sentence contains at least one subordinate clause.

_____15. The possessive case of nouns is indicated by an apostrophe.

_____16. Direct objects are frequently governed by verbs.

_____17. Indirect objects are governed by prepositions.

_____18. An auxiliary verb is a helping word.

_____19. A phrase is a group of words.

_____20. Demonstrative pronouns point out.

_____21. Transitive verbs are completed by complements.

_____22. Intransitive verbs are completed by objects.

_____23. Prepositions also take objects.

_____24. A compound sentence contains one clause only.

_____25. Adverbs modify verbs only.

_____26. Superlative is a degree of comparison.

_____27. The adjective is the only part of speech that may be compared.

_____28. Adjectives may be of purpose or of cause.

_____29. Adverbs may be of manner or of mode.

_____30. Nouns and pronouns may be in apposition only with other nouns or pronouns.

_____31. Nominative absolute means absolutely nominative.

_____32. Root infinitives are adverb forms.

_____33. Active and passive refer to the mood of a verb.

_____34. Articles are always adjectives.

_____35. "Ordinal" describes nouns.

_____36. Tense refers to the time of a verb.

_____37. Participles are verbal adverbs.

_____38. Compound verbs generally contain participles.

_____39. An interjection changes the grammatical structure of a sentence.

_____40. Perfect tenses indicate completed action.

_____41. When a person is directly addressed, his name is in the nominative case.

_____42. The imperative mood is the thought mood.

_____43. The subjunctive mood is the fact mood.

_____44. A collective noun may be followed by a plural verb.

_____45. Progressive tenses indicate incompleted action.

_____46. A substantive is an adjective.

_____47. An appositive adjective is separated by a verb from the noun it modifies.

_____48. Copula verbs take objects.

_____49. Syntax deals with the grammatical structures of a sentence.

_____50. Inflection is a change in form to indicate a change in grammatical relation.

Test of Grammar Analysis

FORM A

■ ■ ■ ■

NAME .....

SCHOOL .....

GRADE .....

Foreign languages studied at school. (Give details) : .....

.....

.....

.....

■ ■ ■ ■

DIRECTIONS: In the following selections a number of words and groups of words have been printed in blackface type. Beneath each selection are a number of statements about the blackface words. Each statement may be completed in several different ways. Choose the word that best completes the statement and place its number in the margin to the right. The first example has been done for you. Read over each selection carefully, then do the questions beneath it.

"He left the **room,** and **went** upstairs **into the room above which was lighted cheerfully.** The was a chair set close **beside the child** and there were signs **of someone having been there lately.** Po Bob sat down in it, and **when he had thought a little,** and composed **himself,** he felt reconciled to **wh had happened,** and went **down** again **quite** happy."

(Example): room: is (1) a verb (2) an adjective (3) a pronoun (4) a noun. __4

1. **He:** is (1) a personal pronoun (2) an adjective (3) an indefinite pronoun (4) an adverb (5) a relative pronoun. ____
2. **He left the room - - - cheerfully:** This sentence is (1) simple (2) compound-complex (3) compound (4) complex. ____
3. **went:** is (1) a copula (2) a new conjugation verb (3) transitive verb (4) verb of the old conjugation. ____
4. **into the room above:** is (1) an adjective phrase (2) a verb phrase (3) an adverbial phrase (4) a simple clause. ____
5. **which was lighted cheerfully:** This clause is (1) adverbial (2) adjectival (3) noun (4) independent. ____
6. **cheerfully:** is (1) a noun (2) a preposition (3) an adjective (4) a verb (5) an adverb. ____
7. **beside the child:** This phrase modifies (1) was (2) chair (3) set (4) close 5) there. ____
8. **someone:** This is (1) a noun (2) an indefinite pronoun (3) a reflexive pronoun (4) an adjective (5) an adverb. ____
9. **of someone having been there lately:** is (1) an adjective phrase (2) an adjective clause (3) an adverb phrase (4) a noun clause. ____
10. **lately:** is an adverb of (1) place (2) manner (3) degree (4) mode (5) time. ____
11. **when he had thought a little:** is (1) an adverbial phrase (2) a noun clause (3) an adverbial clause (4) an adjectival phrase (5) a verb phrase. ____
12. **himself:** This pronoun is (1) demonstrative (2) interrogative (3) relative (4) indefinite (5) reflexive. ____
13. **what:** is (1) an adjective (2) a relative pronoun (3) an indefinite pronoun (4) a noun (5) a demonstrative pronoun. ____
14. **what had happened:** is (1) a noun clause (2) a verb phrase (3) an adjective clause (4) a principal clause (5) an adverbial clause. ____
15. **down:** is (1) a preposition (2) an adverb of degree (3) a conjunction (4) an adverb of place (5) an adjective. ____
16. **quite:** is (1) a pronoun (2) an adverb (3) an adjective (4) a verb (5) a participle. ____

"He assisted the **farmers occasionally** in the **lighter** labors **of their farms;** helped **to make** hay mended the fences; . . . . and cut wood **for** the winter fire. He laid aside, too, **all** the dominant digni and absolute sway with **which he** lorded it **in his little empire,** the school, and **became** wonderful **gentle and ingratiating."**

17. **farmers:** is (1) a verb (2) an adverb (3) a preposition (4) a noun (5) a conjunction. ____
18. **occasionally:** is (1) an adjective (2) a verb (3) an adverb (4) a gerund (5) a pronoun. ____
19. **lighter:** is (1) an interjection (2) an article (3) an adjective (4) a verb (5) an adverb. ____
20. **of their farms:** This group of words is (1) a sentence (2) a principal clause (3) a subordinate clause (4) a phrase (5) a complete predicate. ____
21. **to make:** is (1) a bare predicate (2) an interjection (3) a gerund (4) an infinitive (5) a pronoun. ____
22. **mended:** is (1) a noun (2) an adjective (3) an adverb (4) a verb (5) a pronoun. ____
23. **for:** is (1) a preposition (2) a conjunction (3) an interjection (4) an expletive (5) an article. ____

24. **all:** is (1) an indefinite pronoun (2) a noun (3) a relative pronoun (4) an adverb (5) a cardinal adjective.

25. **which:** This pronoun is (1) personal (2) relative (3) indefinite (4) interrogative (5) demonstrative.

26. **he:** acts as (1) direct object (2) indirect object (3) complement (4) subject (5) noun in apposition.

27. **in his little empire:** This group of words acts as (1) a noun (2) a verb (3) an adjective (4) an adverb (5) a pronoun.

28. **became:** The tense of this verb is (1) simple present (2) simple past (3) present perfect (4) future perfect (5) present progressive.

29. **gentle:** is (1) a predicate adjective (2) an adverb (3) an adherent adjective (4) an appositive adjective.

30. **and:** is (1) an article (2) a preposition (3) an interjection (4) a conjunction (5) an adverb.

31. **ingratiating:** is (1) a verbal noun (2) a gerund (3) a participle (4) a verb (5) an infinitive.

"His school-house was a low **building** of one large room rudely **constructed** of logs; **the windows partly glazed,** and partly thatched with leaves of old copy-books. It was **most** ingeniously secured at vacant hours, by a withe **twisted in the handle** of the door, and **stakes** set **against** the window shutters; so that, **though** a thief **might get in** with perfect ease, he would find **some** embarrassment in getting out; an idea most probably borrowed by the **architect,** Yost Van Houten, **from the mystery** of an ell-pot."

32. **His:** As an adjective, this is (1) demonstrative (2) indefinite (3) possessive (4) descriptive.

33. **building:** The case of this noun is (1) nominative absolute (2) adverbial objective (3) objective predicate (4) predicate nominative.

34. **constructed:** is (1) a finite verb (2) a past participle (3) an adjective (4) an adverb.

35. **the windows partly glazed:** The construction of this phrase is (1) predicate nominative (2) phrasal possessive (3) appositive adjective (4) nominative absolute.

36. **most:** modifies (1) it (2) was (3) ingeniously (4) secured (5) twisted.

37. **twisted:** is a (1) connective (2) participle (3) auxiliary verb (4) gerund (5) root infinitive.

38. **in the handle:** This phrase has the value of (1) a noun (2) an adjective (3) a verb (4) an adverb (5) a preposition.

39. **stakes:** is (1) a subject (2) an adverbial object (3) a retainel object (4) a cognate object (5) an object of a preposition.

40. **against:** is (1) a preposition (2) a conjunction (3) an article (4) a modal verb (5) an adherent adjective.

41. **though:** is a subordinate conjunction of (1) cause (2) uncertainty (3) concession (4) purpose (5) degree.

42. **might get:** the mood of this verb is (1) active (2) intransitive (3) subjunctive (4) passive (5) imperative.

43. **in:** is (1) a conjunctive particle (2) a preposition (3) an adverbial particle (4) an adverb.

44. **some:** This adjective is (1) descriptive (2) superlative (3) pronominal (4) possessive (5) cardinal.

45. **architect:** This noun is (1) object of a preposition (2) an objective in apposition (3) object of a gerund (4) predicate objective.

46. **from the mystery:** this phrase modifies (1) architect (2) borrowed (3) eel-pot (4) idea (5) Van Houten.

"An **opening** in the trees now cheered **him** with the hopes **that the church bridge was at hand.** The wavering reflection of a single star in the bosom of the brook told **him that he was not mistaken.** He **saw** the walls of the church dimly glaring under the trees **beyond.** He **recollected** the place where **Brom Bones's** ghostly competitor **had disappeared.** 'If I **can but reach** that bridge,' thought **Ichabod, 'I am safe'.**"

47. **opening:** is (1) a gerund (2) a preposition (3) an infinitive (4) a present participle (5) a noun. _____

48. **him:** is (1) a direct object (2) an indirect object (3) an object of a preposition (4) a cognate object (5) an adverbial object. _____

49. **that . . . . hand:** This is a noun clause used (1) as object of a verb (2) as object of a preposition (3) in apposition to a noun (4) in apposition to another clause (5) as subject of a verb. _____

50. **him:** is (1) an indirect object (2) a direct object (3) a subject (4) a predicate nominative (5) a nominative of address. _____

51. **that . . . . mistaken:** This clause is (1) co-ordinate (2) adverbial (3) adjectival (4) a noun clause (5) parenthetical. _____

52. **saw:** expresses a (1) wish (2) command (3) concession. (4) condition (5) fact. _____

53. **beyond:** is (1) a particle (2) an adjective (3) an adverb (4) a preposition (5) a pronoun. _____

54. **recollected:** is (1) simple present (2) present perfect (3) past perfect (4) simple past (5) past progressive. _____

55. **Brom Bones's:** is (1) singular objective (2) plural objective (3) sinngular possessive (4) plural possessive (5) singular nominative. _____

56. **had disappeared:** is (1) future perfect (2) present perfect (3) past perfect (4) past emphatic. _____

57. **can reach:** This subjunctive is one of (1) wish (2) purpose (3) concession (4) condition (5) uncertainty. _____

58. **but:** is (1) a preposition (2) a conjunction (3) a particle (4) a verb (5) a noun. _____

59. **Ichabod:** is (1) a direct object (2) an indirect object (3) a subject (4) a complement (5) a nominative of address. _____

60. **safe:** This adjective is (1) predicate (2) appositive (3) adherent (4) adverbial (5) ordinal. _____

TEST OF GRAMMAR ANALYSIS

Form B

TEST OF GRAMMAR ANALYSIS -- FORM B

Name:_____ School:_____ Grade:_____

Date of Birth:_____ Age Last Birthday:____ Sex:_____

Occupation of Father:_____ Language Spoken at Home:_____

DIRECTIONS: In the following selections, a number of words and groups of words have been underlined. Beneath each selection are a number of statements about the underlined words. Each statement may be completed in several different ways. Choose the word or phrase that best completes the statement and place its number in the margin to the right. The first example has been done for you. Read over each selection carefully, then do the questions beneath it.

She entered the garden and turned directly into the arbour which screened her completely. There was a stone seat ensconced beneath the lilacs and there were no signs of anyone having been there recently. The girl sat down in it, and when she had rested a little, and composed herself, she began to consider what she should do, and fell immediately into a brown study.

SAMPLE: Garden: is (1) an adjective (2) a pronoun (3) a noun (4) a verb ___3___

1. She: is (1) a relative pronoun (2) an adverb (3) an adjective (4) a personal pronoun (5) an indefinite pronoun ____

2. She entered...her completely: This sentence is (1) compount (2) compound-complex (3) simple ____

3. turned: is (1) a transitive verb (2) a copula (3) new conjugation verb (4) old conjugation verb ____

4. into the arbour: is (1) an adverbial phrase (2) a verb phrase (3) a simple clause (4) an adjective phrase ____

5. which screened her completely: This clause is (1) adjectival (2) noun (3) adverbial (4) independent ____

6. completely: is (1) a noun (2) a preposition (3) an adjective (4) a verb (5) an adverb ____

7. beneath the lilacs: This phrase modifies (1) was (2) there (3) ensconced (4) seat (5) lilacs ____

8. anyone: This is (1) a noun (2) an indefinite pronoun (3) a reflexive pronoun (4) an adjective (5) an adverb ____

9. of anyone...there recently: is (1) an adjective clause (2) an adverb phrase (3) a noun clause (4) an adjective phrase ____

10. recently: is an adverb of (1) place (2) time (3) manner (4) degree (5) mode ____

11. when she had rested a little: is (1) an adverbial clause (2) a noun clause (3) an adverbial phrase (4) an adjectival phrase (5) a verb phrase ____

12. herself: This pronoun is (1) demonstrative (2) interrogative (3) indefinite (5) reflexive ____

13. what: is (1) an adjective (2) an indefinite pronoun (3) a relative pronoun (4) a noun (5) a demonstrative pronoun ____

14. what she should do: is (1) a verb phrase (2) an adjective clause (3) a principal clause (4) an adverbial clause (5) a noun clause ____

15. immediately: is (1) a preposition (2) an adverb of degree (3) an adjective (4) an adverb of time (5) a conjunction ____

16. brown: this adjective is (1) pronominal (2) descriptive (3) appositive (4) predicate (5) adherent ____

She assisted the girls frequently in the customary tasks of their home, helped to wipe the dishes, fed the chicks, and separated the cream for butter-making. She forgot completely, too, all the haughty demeanor and the regal poise with which she had strutted in her own domain, and grew marvelously kind and endearing.

17. girls: is (1) a conjunction (2) a noun (3) a preposition (4) an adverb (5) a pronoun ____

18. frequently: is (1) a verb (2) an adverb (3) a gerund (4) a pronoun (5) an adjective ____

19. customary: is (1) an adjective (2) a verb (3) an adverb (4) an interjection (5) an article ____

20. of their home: This group of words is (1) a phrase (2) a sentence (3) a principal clause (4) a subordinate clause ____

21. to wipe: is (1) a bare predicate (2) a participle (3) a gerundial infinitive (4) an adverb (5) a noun ____

22. fed: is (1) an adjective (2) an adverb (3) a verb (4) a root infinitive (5) a participle ____

23. for: is (1) an interjection (2) an expletive (3) an article (4) apreposition (5) a conjunction ____

24. all: is (1) a relative pronoun (2) a noun (3) an indefinite pronoun (4) a conjunction (5) a predicate adjective ____

25. which: This pronoun is (1) demonstrative (2) personal (3) relative (4) indefinite (5) interrogative ____

26. she: acts as (1) complement (2) subject (3) direct object (4) indirect object (5) pronoun in apposition ____

27. in her domain: This phrase acts as (1) a verb (2) a noun (3) an adverb (4) an adjective (5) a pronoun ____

28. grew: The tense of this verb is (1) present perfect (2) simple present (3) future perfect (4) simple past (5) present progressive ____

29. kind: is (1) an adverb (2) an adherent adjective (3) an article (4) a noun (5) a predicate adjective ____

30. and: is (1) an article (2) an interjection (3) an adverb (4) a conjunction (5) a proposition ____

31. endearing: is (1) a gerund (2) a verbal noun (3) a participle (4) an infinitive (5) a verb ____

Her home was a small shanty of two tiny rooms, roughly built of sod, the door half-hinged and half hung with straps of worn harness. It was very curiously fashioned of rough boards with a division cut through the center of it, and the halves hung on the sturdy door-post, so that while the upper section might open out for ventilation, the lower would prevent all drafts from getting in, an arrangement very likely contrived by the craftsman, Paddy Finn, from his memory of the old land.

32. Her: An an adjective, this is (1) possessive (2) demonstrative (3) indefinite (4) descriptive ____

33. shanty: The case of this noun is (1) nominative absolute (2) predicate nominative (3) adverbial objective (4) direct object ____

34. built: is (1) an adjective (2) a past participle (3) a finite verb (4) an adverb (5) a particle ____

35. the door half-hinged: This phrase is (1) root infinitive (2) nominative absolute (3) appositive adjective (4) predicate nominative (5) phrasal possessive ____

36. very: modifies (1) it (2) was (3) curiously (4) fashioned (5) door ____

37. cut: is (1) a root infinitive (2) a gerund (3) an auxiliary verb (4) a participle (5) connective ____

38. through the center: This phrase has the value of (1) a preposition (2) an adverb (3) an adjective (4) a verb (5) a noun ____

39. halves: is (1) object of a preposition (2) an adverbial object (3) a cognate object (4) a retained object (5) nominative absolute ____

40. on: is (1) an article (2) a conjunction (3) a preposition (4) an adverb (5) a particle ____

41. while: is a subordinate conjunction of (1) condition (2) cause (3) purpose (4) degree (5) concession ____

42. might open: The mood of this verb is (1) passive (2) imperative (3) transitive (4) indicative (5) active ____

43. out: is (1) an adverb (2) a conjuctive particle (3) a preposition (4) an expletive ____

44. all: This adjective is (1) pronominal (2) descriptive (3) superlative (4) possessive (5) cardinal ____

45. craftsman: This noun is (1) object of a gerund (2) object of a preposition (3) predicate objective (4) adverbial objective (5) object in apposition ____

46. from his memory: modifies (1) Paddy Finn (2) craftsman (3) contrived (4) by (5) arrangement ____

A slackening of the storm now inspired her with the feeling that she was coming within the shelter of the poplar bluffs. The shadows on the path convinced her that she had not erred. She perceived the faint outlines of the trees dimly visible under the stars above. She recognized the spot where Abe Johnston's car had been wrecked. "If I can only make the gate," thought the girl, "I am home."

47. slackening: is (1) an infinitive (2) a gerund (3) a participle (4) a noun ____

48. her: is (1) a direct object (2) cognate object (3) adverbial object (4) indirect object (5) a retained object ____

49. that she...bluffs: This clause is (1) object of a verb (2) subject of a verb (3) in apposition to a noun (4) a predicate nominative ____

50. that: is (1) a relative pronoun (2) a conjunction (3) a demonstrative pronoun (4) an adjective (5) a noun ____

51. she had not erred: This clause is (1) adverbial (2) coordinate (3) a noun clause (4) adjectival (5) parenthetical ____

52. perceived: expresses (1) fact (2) condition (3) concession (4) command (5) wish ____

53. above: is (1) an adverb (2) a preposition (3) an adjective (4) a particle (5) a conjunction ____

54. Abe Johnston's: is (1) plural possessive (2) singular objective (3) plural objective (4) singular nominative (5) singular possessive ____

55. had been wrecked: is (1) future perfect (2) present perfect (3) past perfect (4) past emphatic (5) past progressive ____

56. can make: This subjunctive is one of (1) purpose (2) condition (3) concession (4) wish (5) uncertainty ____

57. only: is (1) an adjective (2) a preposition (3) an expletive (4) an auxiliary verb (5) a particle ____

58. girl: is (1) an indirect object (2) a direct object (3) a subject (4) a nominative of address (5) a predicate nominative ____

59. Home: is used here as (1) a noun (2) an adjective (3) an adverb (4) a verbal noun ____

VOCABULARY TEST

FORM A.

NAME _____ Grade _____

School _____

Post Office _____

Birthday _____ Age Last Birthday _____ Sex _____

Country of Birth _____

Language Spoken at Home _____

Occupation of Father _____

Look at the first word in line A. Find the other word in the line that means the same, or almost the same. Write its number on the line at the edge of the page. Do the same with all the other lines. The first few lines show you how to do it. Do as many as you can.

A. rapid	1. warm. 2. moist 3. quick 4. near 5. now	3
B. head	1. doorway 2. part of body 3. speed 4. hat 5. book	2
C. cattle	1. barn 2. farmer 3. stove 4. cows 5. car	4
D. demand	1. desire 2. ask for 3. shut 4. turn 5. open	2

1. ask	1. answer 2. tell 3. question 4. repair 5. reply	____
2. gather	1. get 2. distribute 3. collect 4. goatherd 5. earn	____
3. notice	1. inform 2. see 3. use 4. accept 5. sight	____
4. travel	1. carry 2. journey 3. refresh 4. train 5. approve	____
5. quiet	1. still 2. warm 3. dark 4. inquire 5. moist	____
6. final	1. find 2. autumnal 3. joyful 4. weary 5. last	____
7. immediate	1. remote 2. comfortable 3. important 4. close 5. necessary	____
8. beneath	1. neither 2. around 3. under 4. reddish 5. open	____
9. courage	1. courtesy 2. bravery 3. wisdom 4. discretion 5. love	____
10. accompany	1. attend 2. companion 3. remove 4. place 5. desire	____
11. gradual	1. stiff 2. winding 3. green 4. sudden 5. by degrees	____
12. pony	1. flower 2. island 3. small horse 4. large dog 5. cart	____
13. nearly	1. surely 2. almost 3. next 4. never 5. at least	____
14. rage	1. anger 2. hatred 3. friendship 4. excitement 5. revenge	____
15. glance	1. replace 2. decide 3. eyes 4. look quickly 5. open	____
16. hinder	1. remain 2. assist 3. prevent 4. below 5. eat	____
17. brilliant	1. shining 2. useless 3. fluent 4. green 5. bubbling	____
18. formerly	1. perhaps 2. soon 3. form 4. before 5. orderly	____
19. apparent	1. required 2. half open 3. clear 4. powerful 5. father	____
20. inhabit	1. occupy 2.habit 3. cultivate 4. home 5. forecast	____
21. signify	1. firefly 2. significant 3. write 4. mean 5. forecast	____
22. prairie	1. a grassy plain 2. garden 3. farm 4. desert 5. prepare	____
23. certainly	1. amplify 2. probably 3. hopefully 4. surely 5. naturally	____
24. chaff	1. wheat 2. husks 3. throw 4. board 5. staff	____
25. equip	1. very fast 2. strike 3. paint 4. provide 5. plant	____
26. humility	1. kindness 2. humbleness 3. envy 4. mantle 5. humidity	____
27. pilot	1. attorney 2. soldier 3. pile 4. guide 5. polite	____
28. uneven	1. rough 2. hard 3. hopeles s 4. undone 5. accidental	____
29. successor	1. foregather 2. remainder 3. king 4. follower 5. guardian	____
30. devout	1. religious 2. handsome 3. morbid 4. resilient 5. hungry	____
31. exempt	1. empty 2. careless 3. free 4. peaceful 5. pale blue	____
32. hale	1. clever 2. lovable 3. superfluous 4. icy 5. healthy	____
33. hoist	1. turn 2. raise 3. hurt 4. determine 5. clasp	____
34. swerve	1. speed up 2. upset 3. stop 4. turn aside 5. sweat	____
35. panic	1. terror 2. pane 3. auditorium 4. heat 5. open	____
36. award	1. hope for 2. away 3. assign 4. request 5. shoot	____
37. uncouth	1. cruel 2. silly 3. uncover 4. bold 5. awkward	____
38. sunder	1. separate 2. loud 3. refulgent 4. under 5. sudden	____
39. precarious	1. precious 2. prominent 3. uncertain 4. probable 5. execrable	____

40. dexterity 1. majesty 2. dextrose 3. tallness 4. monkey 5. expertness _____
41. brag 1. boast 2. orate 3. fool 4. lizard 5. rag bag _____
42. brandish 1. shut up 2. radish 3. flourish 4. hide 5. grey _____
43. feud 1. decision 2. advice 3. feudal 4. quarrel 5. friend _____
44. incorporate 1. business 2. improve 3. example 4. corporal 5. unite _____
45. kit 1. kitchen 2. outfit 3. nadir 4. skunk 5. equitable _____
46. averse 1. anxious 2. unwilling 3. reversal 4. poem 5. opposite _____
47. jumble 1. juniper 2. confusion 3. celerity 4. team 5. aloofness _____
48. formulate 1. state precisely 2. relation 3. boil 4. pair 5. conform _____
49. parapet 1. parrot 2. branch 3. order 4. dead 5. rampart _____
50. prowl 1. steal 2. wolf 3. shoot 4. inhibit 5. rove _____
51. eject 1. conjecture 2. exhibit 3. interrupt 4. expel 5. surrender _____
52. holster 1. brick 2. halt 3. pistol-case 4. aborigine 5. confront _____
53. sheen 1. shall not 2. brightness 3. foliage 4. purple 5. yarn _____
54. ladle 1. lift out 2. lapel 3. stove 4. coat-hanger 5. lucid _____
55. irresolute 1. resolve 2. evanescent 3. tardy 4. climbing 5. undecided _____
56. gusty 1. machine gun 2. soporific 3. mournful 4. tempestuous _____
57. palfrey 1. balcony 2. horse 3. pallid 4. warrior 5. romance 5. disgusted _____
58. spherical 1. round 2. conical 3. solid 4. extreme 5. outstanding _____
59. avalanche 1. efflorescence 2. windfall 3. glacier 4. warship 5. landslide _____
60. bowlder 1. braver 2. excess 3. stone 4. hat 5 .reformed _____
61. chum 1. cosy 2. pal 3. chapter 4. minnow 5. child _____
62. halve 1. irrigate 2. resilient 3. own 4. despair 5. bisect _____
63. gentility 1. generosity 2. gentile 3. refinement 4. flattery 5. posterity _____
64. avaricious 1. covetous 2. voracious 3. impressive 4. mighty 5. crumbling _____
65. enigma 1. steam engine 2. decision 3. aspiration 4. clarity 5. puzzle _____
66. fiscal 1. fishy 2. monetary 3. interesting 4. dormant 5. dead _____
67. garner 1. succeed 2. guarantee 3. place 4. replenish 5. gather up _____
68. immutable 1. mysterious 2. merciful 3. invariable 4. mute 5. diseased _____
69. immure 1. reside 2. verbose 3. laugh 4. manicure 5. confine _____
70. turnpike 1. roadside 2. flower 3. toll-gate 4. piker 5. pathos _____
71. cynicism 1. disintegration 2. wreckage 3. philosophy 4. transpiration 5. contempt _____
72. auspices 1. hospital 2. prophecies 3. protection 4. prohibition 5. liquids _____
73. coyotes 1. gophers 2. prairie wolves 3. anteaters 4. hunters 5. environs _____
74. infuriate 1. distill 2. infiltrate 3. synthesize 4. express 5. enrage _____
75. vibrant 1. vibrous 2. tremulous 3. experienced 4. acme 5. interminable _____
76. dyke 1. destroy 2. desperation 3. ditch 4. boy 5. marsh _____
77. avowal 1. plenty 2. aspect 3. devour 4. mortify 5. declaration _____
78. morose 1. ecstatic 2. sullen 3. tomorrow 4. cryptic 5. forgotten _____

79.	halibut	1. pigeons 2. fern 3. flat fish 4. halcyon 5. anterior
80.	momentum	1. extrovert 2. catalyst 3. momentary 4. biological 5. impetus
81.	avidity	1. eagerness 2. vision 3. zenith 4. surplus 5. aperture
82.	invulnerable	1. torrid 2. merciless 3. unassailable 4. inviolate 5. remarkable
83.	clandestine	1. candlestick 2. vernal 3. indubitable 4. secret 5. profane
84.	prescience	1. osprey 2. pathology 3. conscience 4. pressure 5. foreknowledge
85.	corpulent	1. fat 2. indigenous 3. corpse-like 4. psychic 5. reversible
86.	manacle	1. shackle 2. orthodoxy 3. barbarism 4. man-killer 5. hormone
87.	scutcheon	1. inebriation 2. spearhead 3. nonsense 4. shield 5. scuttle
88.	mania	1. pathology 2. partiality 3. liquid 4. remainder 5. madness
89.	scurrilous	1. cumulous 2. itchy 3. dynamic 4. abusive 5. considerate
90.	fulminate	1. fool proof 2. fulfil 3. explode 4. external 5. auroral
91.	remedial	1. personal 2. curative 3. medium 4. myopic 5. polite
92.	silvan	1. forest-like 2. silvery 3. permanent 4. comparative 5. endocrine
93.	oscillate	1. vibration 2. kiss 3. quarrel 4. distillation 5. amplitude
94.	sapient	1. economic 2. atomic 3. reprehensible 4. sage 5. sirupy
95.	refraction	1. unified 2. bending 3. fabrication 4. hysterics 5. pundit
96.	recuperate	1. recover 2. culpable 3. respiratory 4. customary 5. murder
97.	quandary	1. homicide 2. gentry 3. quarry 4. turn-out 5. predicament
98.	ostler	1. surgeon 2. tappet 3. stable-boy 4. hustler 5. facade
99.	jejune	1. young 2. uninteresting 3. empirical 4. octopus 5. clarifying
100.	halbert	1. kinsman 2. avuncular 3. halibut 4. prehensile 5. battle-axe

HIGH SCHOOL

VOCABULARY TEST

FORM A

• •

EXAMINER'S MANUAL

• •

THE INSTITUTE OF APPLIED ART, LIMITED
Educational Publishers
EDMONTON - - - - ALBERTA

HIGH SCHOOL

Vocabulary Test

FORM A

EXAMINER'S MANUAL

By

J. W. CHALMERS, M.A.

THE INSTITUTE OF APPLIED ART, LIMITED
Educational Publishers
EDMONTON :: ALBERTA

CONTENTS

TABLES

HIGH SCHOOL VOCABULARY TEST MANUAL

INTRODUCTION

Today in the high school much more attention than formerly is being paid to students' reading ability. This ability, as is well known, depends on such factors as speed, vocalization, number of eye fixation per line, number of regressions per line, and reading vocabulary, or number of words of which the meaning is known when the words are encountered in the child's reading.

Several excellent tests of reading vocabulary are already in existence; for example, the Thorndike Word Knowledge Test and the New Stanford Word Meaning Test. However, these are designed for the elementary and intermediate grades only. No such tests seemed available for the high school grades, so the author was compelled, in the course of an investigation in the field of high school English, to devise the present one. This test has now been given to approximately 1,500 intermediate and high school students in Alberta schools in Grades VII to XII inclusive, and therefore the norms may be considered as well standardized at these levels.

SELECTION OF TEST ITEMS

Each of the hundred items comprising the High School Vocabulary Test consists of a stimulus word and five possible response words, one of which is synonymous with the stimulus word. The students' problem is to indicate the synonym by writing its number in the right hand margin. A glance at the test itself will make this clear.

The stimulus words themselves were chosen from Thorndike's "Teacher's Word Book of Twenty Thousand Words." This Word Book, it might be noted, consists of the most common twenty thousand words in the English language. The most common one thousand words are indicated by the numeral 1, the next most common thousand by the numeral 2, and so on.

The stimulus words in the High School Vocabulary Test were chosen as follows:

Five words from each 1000 of the most common 4000;
Six words from each 1000 of the next most common 9000;
Five words from each 1000 of the next most common 4000;
Two words from each 1000 of the least common 3000;

Thus the stimulus words in the text are arranged in order from most to least common. This order roughly coincides with that of increasing difficulty of the items.

5 1 3 4 5 2 2 2 1 5 5 4 3 2 1 5

VALIDITY

One of the most difficult requirements which the educationist must satisfy in the construction of an objective test is that the test be valid; that is, that it measure what it claims to measure. The validity of the High School Vocabulary Test has been established by correlating scores on this test and on the two tests mentioned above, i.e., the New Stanford Word Meaning and the Thorndike Word Knowledge tests. A large number of students wrote the Vocabulary Test and one or both of the others. The co-efficients of correlation and the number of cases for each test are as follows:

	r	N
Thorndike Word Knowledge	.91	107
New Stanford Word Meaning	.85	227

As each of these tests is well established and of recognized validity, and as the co-efficient of correlation is in each case quite high, the inference is that the High School Vocabulary Test is also satisfactorily valid.

RELIABILITY

Second only to the validity in importance is the reliability of a test, or the consistency of its measurements. If the test is reliable, the student who stands first in his class when he first takes the test, should stand first or nearly first when he again takes the test, or when he takes an alternate form of the same test. The most satisfactory way to measure reliability is to correlate the scores of students who have taken alternate forms of the same test. To find the co-efficient of reliability of the High School Vocabulary Test, 297 students were given Form A and Form B. The co-efficient was found to be .89, which is satisfactorily high.

DISTRIBUTION OF SCORES

In its present form the High School Vocabulary Test, Form A, has been, previous to publication, given to 1,539 students in Grades VII to XII inclusive. The distribution of these scores appears in Table I below.

In Table II below appear data relative to the central tendency and variability. This table gives additional proof of the validity of the test, in that there is a steady increase in central tendency from Grade VII through to Grade XII.

3 1 5 3 1 4 2 5 3 1 4 1 4 2 4 2 4 1 4 1

Table I.—Distribution of Scores, Grades VII to XII

Score	Grade VII	VIII	IX	X	XI	XII
96-100	----	----	----	----	1	2
91- 95	2	1	2	8	14	43
86- 90	1	1	3	23	16	50
81- 85	1	1	8	28	31	48
76- 80	3	3	21	31	47	54
71- 75	3	5	27	51	44	49
66- 70	1	8	31	52	40	25
61- 65	6	9	56	36	28	22
56- 60	6	17	53	44	27	19
51- 55	14	22	48	41	18	10
46- 50	15	19	31	16	8	2
41- 45	15	14	38	9	6	1
36- 40	20	17	9	6	----	1
31- 35	24	4	8	5	----	0
26- 30	6	5	1	----	----	1
21- 25	2	1	----	----	----	----
Total	119	127	336	350	280	327

Table II.—Statistical Measures

	Grade VII	VIII	IX	X	XI	XII
Mean	42.63	50.93	58.23	66.1	70.48	77.03
S.D.	10.57	10.25	12.36	13.35	12.05	11.63
3rd quartile	48.82	58.57	66.3	75.4	79.15	86.33
Median	40.50	51.62	58.1	66.7	71.5	78.2
1st quartile	33.00	42.98	49.5	56.2	69.96	70.08
Q*	8.7	7.8	8.4	9.6	8.6	8.1

*Semi-interquartile range.

DIRECTIONS FOR GIVING THE TEST

After the test forms have been distributed, have the pupils fill in their names and such other information as is desired. Read aloud separately each of the items required, having the class work through each together. When this is finished, inform the class that they will have half an hour exactly to do the test. Give them the signal to begin by saying, "Start." At the end of thirty minutes precisely, say "Stop." Collect the tests at once.

SCORING THE TESTS

The key for Form A. is printed on pages 4 and 5 of this manual. Simply lay the edge of the page alongside of the column of answers of the test. Allow one point for each correct answer, but do not penalize for incorrect answers or guesses.

KEY
Form A
Page 4

3
5
1
3
4
5
1
1
4
5
4
3
2
1
1
4
2
1
5
3
2
5

5 3 1 5 2 5 1 5 3 5 3 2 5 2 3 5 2

KEY
Form A
Page 2

1 3 2 2 3 1 1 2 5 4 3 2 5 3 1

INTERPRETING THE SCORES

To compare the standing of a class as a whole with the average standing of the population on which the norms for this test are based, the arithmetic mean or average for the whole class may be compared with the appropriate mean in Table II. If the mean for the class is less than the corresponding mean in Table II, the class is retarded. The exact degree of retardation, expressed as a fraction of a school year, may be found by the following formula:

$$\frac{M(t)-M(c)}{M(t)-M(t-1)}$$

where: M(t) is mean from Table II for grade being tested.
M(c) is mean for class being tested.
M(t—1) is mean from Table II for grade immediately below class being tested.

The corresponding formula for an accelerated class will be:

$$\frac{M(c)-M(t)}{M(t+1)-M(t)}$$

Where M(t) is the mean for Grade VII, M(t—1) may be taken as 34.50.* Where M(t) is the mean for Grade XII, M(t+1) may be taken as 80.50.†

As the tests were originally given in January, the value of M(t) is what might be expected at the **middle** of the school year.

To determine whether a single student's score is good, mediocre, or poor, Table III may be used. Given the score and grade, the decile class may be found. A few examples will make the use of this table clear. Suppose a child in Grade VII has a score of 43. By reference to Table III we see that this places him in the sixth decile class. This means that he has done better than five-tenths of the Grade VII students on whose results this table is based, and worse than four-tenths. Similarly, a Grade IX student with a score of 68, being in the eighth decile class, has done better than seven-tenths and worse than two-tenths of the 336 students in this grade who have already taken the test.

---

* Obtained by extrapolation.

† Mean score obtained by 140 Normal School students (Grade XII graduates) on tests administered in early fall.

Table III.—Decile Values of Raw Scores

Score	Grade VII	VIII	IX	X	XI	XII
92-100	10	10	10	10	10	10
89- 91	10	10	10	10	10	9
86- 88	10	10	10	10	10	8
85	10	10	10	10	9	8
82- 84	10	10	10	9	9	7
81	10	10	10	9	9	6
79- 80	10	10	10	9	8	6
78	10	10	10	8	8	5
76- 77	10	10	10	8	7	5
75	10	10	9	8	7	4
74	10	10	9	8	6	4
72- 73	10	10	9	7	6	4
70- 71	10	10	9	7	5	3
69	10	10	8	6	5	3
67- 68	10	9	8	6	4	3
65- 66	10	9	8	5	4	2
63- 64	9	9	7	5	3	2
62	9	9	7	4	3	2
60- 61	9	8	6	4	3	2
59	9	8	6	4	2	1
58	9	8	5	3	2	1
55- 57	9	7	5	3	2	1
54	8	7	4	2	2	1
53	8	6	4	2	2	1
52	8	6	4	2	1	1
50- 51	8	5	3	2	1	1
48- 49	7	5	3	1	1	1
47	7	4	3	1	1	1
45- 46	6	4	2	1	1	1
43- 44	6	3	2	1	1	1
41- 42	6	3	1	1	1	1
40	5	3	1	1	1	1
39	5	2	1	1	1	1
36- 38	4	2	1	1	1	1
34- 35	3	1	1	1	1	1
31- 33	2	1	1	1	1	1
0- 30	1	1	1	1	1	1

FACTORS AFFECTING TEST PERFORMANCE

The author has investigated a number of factors which might seem to have some influence on test performance. These factors might be divided into three classes as follows:

A.—Factors tending to Raise Performance.

1. **Occupation:** Children whose parents belonged to professional or managerial occupational classes were found to do better, on the average, than the others.
2. **Intelligence:** High mental age went with high Vocabulary Test performance.

B.—Factors not Influencing Performance.

Age and Sex: Neither of these factors alone seemed to have the slightest influence on test performance.

C.—Factors tending to Lower Performance.

1. **Occupation:** Children of farmers and unskilled laborers did less well, on the average, than others.
2. **Intelligence:** Low mental age went with low Vocabulary Test performance.
3. **Bilingualism:** Children speaking another tongue than English at home did less well than those who speak English only.

CONCLUSION

The High School Vocabulary Test has been found of value not only in measuring reading vocabulary, but also in appraising general English ability. Table IV below indicates some co-efficients of correlation between scores on the Vocabulary Test and scores on other English tests.

Table IV.—Correlation Between Vocabulary Tests and Other Tests

Test.	r	N
New Stanford Paragraph Meaning	.78	227
Hudelson Composition Scale	.66	422
Carroll Prose Appreciation Test:		
Senior	.34	183
Junior	.34	325
Test of Grammar Terminology	.33	531
Test of Grammar Analysis	.64	532

Note 1.—None of these co-efficients have been corrected for attenuation. Such correction would make them appreciably higher.

Note 2.—The two grammar tests, as yet unpublished, are by the same author as the High School Vocabulary Test.